Run to failure experiment D1

Overview

Simulation Steps

Uncertainty Quantification

Trajectories

load main workspace

```matlab
% load the workspace necessities
addpath(genpath(pwd));
load_db_params;

% load UAV airframe
uav_sern = 'X001';
conn = database(datasource_name, user_name, password);
octomodel = get_airframe(conn, uav_sern);

% load battery
battery_sern = 'B001';
battery = get_battery(conn, battery_sern);

% load motors
[Motor1, Motor2, Motor3, Motor4, Motor5, Motor6, Motor7, Motor8] = get_motors(conn, octomodel.i

% get the current mission number
mission_id = table2array(select(conn, 'select id from mission_tb mt order by id desc limit 1;')
if isempty(mission_id)
    mission_id = 1;
else
    mission_id = mission_id + 1;
end

% close the connection after loading the components, other fuctions handle data writing
conn.close();

% initial rul estimate (mission flight time) used as baseline in
rul_hat = 18.0;
```

```
% minimum rul
rul_threshold = 10.0;

% load base directory
load_base_workspace;
```

Initialize some variables

```
end_sim_count = 0;

% number of stochastic simulations per mission index
n_samples = 25;

% for poly fitting this is the window size
lookback = 6;
horizon = 2;


% number of missions (can be oversized)
n_missions = 150;

% keep track of delta over time
% number of samples, 3 degradation parameters, 2 coefficients to save
% (slope & intercept)
polys = zeros(n_samples, 3, 2);

q_poly_dist = zeros(n_missions, 4);
r_poly_dist = zeros(n_missions, 4);
m_poly_dist = zeros(n_missions, 4);

% keep track of degradation parameter values for poly fitting
q_deg = zeros(n_samples, 1);
r_deg = zeros(n_samples, 1);
m_deg = zeros(n_samples, 1);

q_deg_dist = zeros(n_missions, 2);
r_deg_dist = zeros(n_missions, 2);
m_deg_dist = zeros(n_missions, 2);

% keep track of rul
ruls = zeros(n_missions, 1);

% keep track of system performance parameters from stochastic runs
avg_pos_errs = zeros(n_samples, 1);
std_pos_errs = zeros(n_samples, 1);
avg_ctrl_errs = zeros(n_samples, 1);
std_ctrl_errs = zeros(n_samples, 1);
z_ends = zeros(n_samples, 1);
v_ends = zeros(n_samples, 1);
flight_times = zeros(n_samples, 1);

% keep track of stop codes from stochastic runs
stop_codes = zeros(n_samples, 3);
```

```
% mean & standard deviation from mission index to mission index
avg_pos_err_dist = zeros(n_missions, 2);
std_pos_err_dist = zeros(n_missions, 2);
avg_ctrl_errs_dist = zeros(n_missions, 2);
std_ctrl_errs_dist = zeros(n_missions, 2);
z_ends_dist = zeros(n_missions, 2);
v_ends_dist = zeros(n_missions, 2);
flight_times_dist = zeros(n_missions, 2);
stop_codes_dist = zeros(n_missions, 3);
```

Main Loop

```
for mission_idx = 1:n_missions
    tic
    mission_id_start = mission_id;
    mission_id_stop = mission_id + n_samples-1;
```

the lookback and horizon window sizes are a function of the number of missions

```
    % by increasing the window size over time we are accounting for more data
    % and the variance in the degradation rate estimations will decrease naturally
    if mission_idx >= 12 && mission_idx < 20
        lookback = 8;
        horizon = 2;
    elseif mission_idx >= 20 && mission_idx < 30
        lookback = 10;
        horizon = 3;
    elseif mission_idx >= 30 && mission_idx < 50
        lookback = 12;
        horizon = 3;
    elseif mission_idx >= 50
        lookback = 9;
        horizon = 2;
    end

    % keep track of the current rul (maximum mission flight time) estimate
    ruls(mission_idx) = rul_hat;
```

Stochastic simulation

each sample selects a random trajectory (there are now 36 trajectories to choose from)

```
    for sample_num = 1:n_samples
        load_trajectory;
        while trajectory.path_time > rul_hat
            load_trajectory;
        end
        fprintf("[INFO] mission number: %d, sample number: %d, trajectory id <%d> with path_tim

        sys = "TrueSystem";
        octomodel.sampletime = true_sample_rate;
```

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```
        %fprintf('[INFO] simulating true system on i: %d\n', mission_idx)
        %tic
        sim('truesystem.slx');
        %toc
```

Capture system performance parameters

```
        avg_pos_errs(sample_num) = mean(euclidean_pos_err.Data(:,1));
        std_pos_errs(sample_num) = std(euclidean_pos_err.Data(:,1));
        avg_ctrl_errs(sample_num) = mean([ctrl_err.Data(:,1); ctrl_err.Data(:,2)]);
        std_ctrl_errs(sample_num) = std([ctrl_err.Data(:,1); ctrl_err.Data(:,2)]);
        z_ends(sample_num) = battery_actual.Data(end, 2);
        v_ends(sample_num) = battery_actual.Data(end, 1);
        flight_times(sample_num) = round(flight_time.Data(end),4);
        stop_codes(sample_num, :) = any(stop_code.Data(:,:));
```

update degradation variance

use the kalman filter estimates

```
        r_var = battery_observed.Data(end, 6);
        q_var = battery_observed.Data(end, 8);
        m_var = motors.Data(2, 4);
```

keep track of the degradation parameters for each sample

```
        r_deg(sample_num, 1) = battery.R0;
        q_deg(sample_num, 1) = battery.Q;
        m_deg(sample_num, 1) = Motor2.Req;
```

Update degradation rate of change

```
        if mission_idx > lookback
            x = double(((mission_idx - (lookback)):1:mission_idx-1)');
            r_ = r_deg_dist(x,2).*randn(lookback,1)+r_deg_dist(x,1);
            r_poly = polyfit(x, smoothdata(r_, 'rlowess', 5), 1);

            q_ = q_deg_dist(x,2).*randn(lookback,1)+q_deg_dist(x,1);
            q_poly = polyfit(x, smoothdata(q_, 'rlowess', 5), 1);

            m_ = m_deg_dist(x,2).*randn(lookback,1)+m_deg_dist(x,1);
            m_poly = polyfit(x, smoothdata(m_, 'rlowess', 5), 1);

            polys(sample_num, 1, :) = r_poly;
            polys(sample_num, 2, :) = q_poly;
            polys(sample_num, 3, :) = m_poly;

            r_mu = polyval(r_poly, mission_idx + horizon);
            q_mu = polyval(q_poly, mission_idx + horizon);
            m_mu = polyval(m_poly, mission_idx + horizon);
        end
        %%%write_degradation_data;
        %%%clear('trajectory', 'battery_actual', 'battery_observed', 'ctrl_err', 'current', 'cu
```

sample the degradation parameters and update

```matlab
        if mission_idx > lookback
            battery.R0 = max(abs(normrnd(r_mu, r_var)), .0001);
            battery.Q = min(abs(normrnd(q_mu, q_var)), 15.5);
            Motor2.Req = max(abs(normrnd(m_mu, m_var)), .001);
        else
            battery.R0 = max(abs(normrnd(rdeg(mission_idx), r_var)), .0001);
            battery.Q = min(abs(normrnd(qdeg(mission_idx), q_var)), 15.5);
            Motor2.Req = max(abs(normrnd(mdeg(mission_idx), m_var)), .001);
        end
        fprintf("[INFO] degradation parameters: %.4f\t%.4f\t%.4f", battery.R0, battery.Q, Motor
```

write mission data to database

```matlab
        distance = calculatedistance([pos_actual.Data(:,1) pos_actual.Data(:,2)]);
        conn = database(datasource_name, user_name, password);
        start = table2array(select(conn, 'select mt.dt_stop from mission_tb mt order by dt_stop
        conn.close();
        if isempty(start)
            start = datetime(now, 'ConvertFrom', 'datenum');
        end
        start = datetime(start, 'InputFormat', 'yyyy-MM-dd HH:mm:ss');
        start = dateshift(start, 'start', 'second');
        start = start + minutes(1);
        stop = start + seconds(flight_time.Data(end, 1)*60);

        fprintf("[INFO] i: %d\tmission_id: %d\trul_hat: %.2f\tflight_time: %.2f\tdistance: %.2f

        write_mission_data;
        mission_id = mission_id + 1;
        %%%write_battery_data;
        %%%write_flight_data;
    end
    toc
```

end of stochastic simulation for the current mission index

Update component degradation forecast distributions

```matlab
    r_deg_dist(mission_idx, :) = [mean(r_deg), std(r_deg)];
    q_deg_dist(mission_idx, :) = [mean(q_deg), std(q_deg)];
    m_deg_dist(mission_idx, :) = [mean(m_deg), std(m_deg)];
```

Update degradation rate distributions

average delta (rate of change) (rqm_poly_means(1)) of the samples and standard deviation (rqm_poly_stds(2))

average bias (rqm_poly_means(2)) of the samples and standard deviation of the bais (rqm_poly_stds(2))

```matlab
    r_poly_means = reshape(mean(polys(:, 1, :)), 1, []);
    r_poly_stds = reshape(std(polys(:,1,:)), 1, []);
```

```
        r_poly_dist(mission_idx, :) = [r_poly_means(1) r_poly_stds(1) r_poly_means(2) r_poly_stds(2

        q_poly_means = reshape(mean(polys(:, 2, :)), 1, []);
        q_poly_stds = reshape(std(polys(:,2,:)), 1, []);
        q_poly_dist(mission_idx, :) = [q_poly_means(1) q_poly_stds(1) q_poly_means(2) q_poly_stds(2

        m_poly_means = reshape(mean(polys(:, 3, :)), 1, []);
        m_poly_stds = reshape(std(polys(:,3,:)), 1, []);
        m_poly_dist(mission_idx, :) = [m_poly_means(1) m_poly_stds(1) m_poly_means(2) m_poly_stds(2
```

Update system performance parameters

```
        avg_pos_err_dist(mission_idx, :) = [mean(avg_pos_errs), std(avg_pos_errs)];
        std_pos_err_dist(mission_idx, :) = [mean(std_pos_errs), std(std_pos_errs)];
        avg_ctrl_err_dist(mission_idx, :) = [mean(avg_ctrl_errs), std(avg_ctrl_errs)];
        std_ctrl_err_dist(mission_idx, :) = [mean(std_ctrl_errs), std(std_ctrl_errs)];
        z_ends_dist(mission_idx, :) = [mean(z_ends), std(z_ends)];
        v_ends_dist(mission_idx, :) = [mean(v_ends), std(v_ends)];
        flight_times_dist(mission_idx, :) = [mean(flight_times), std(flight_times)];
        stop_codes_dist(mission_idx, :) = [sum(stop_codes(:, 1))/n_samples, sum(stop_codes(:, 2))/n
```

Write stochastic data to system_parameter_tb

```
        write_stochastic_data;
```

Update the RUL

NOTE - This is the function that we are trying to learn! In this application, RUL is a function of position error variance, ending state of charge, and flight time, yet we do not know how these interact with each other.

```
        % increase rul estimate by 20 seconds if 100% of the samples result in
        % success
        if stop_codes_dist(mission_idx, 3) > .99
            rul_hat = rul_hat + .33;
        % if 95% or greater result in success, then just update it with a small
        % "cost of living" amount
        elseif stop_codes_dist(mission_idx, 3) > .95
            rul_hat = rul_hat - .03;
        % decrease the rul estimate by 10 seconds if 90%-95% are success
        elseif stop_codes_dist(mission_idx, 3) > .90
            rul_hat = rul_hat - .17;
        % decrease the rul estimate by 20 seconds if 85%-90% are success
        elseif stop_codes_dist(mission_idx, 3) > .85
            rul_hat = rul_hat - .33;
        % decrease the rul estimate by 40 seconds if less than 85% of the
        % samples result in success
        else
            rul_hat = rul_hat - .66;
        end

        % update the end simulation count to know when to stop
        if stop_codes_dist(mission_idx, 3) < .50
            end_sim_count = end_sim_count + 1;
            if end_sim_count == 10
```

```
            break;
        end
        if end_sim_count > 3 && rul_hat < rul_threshold
            break;
        end

    end

end
```

[INFO] mission number: 1, sample number: 1, trajectory id <28> with path_time: 16.01 that meets constraint: path_tim
[INFO] degradation parameters: 0.0023 14.9810 0.2370
[INFO] i: 1 mission_id: 1668 rul_hat: 18.00 flight_time: 16.02 distance: 1182.44 R0: 0.00228 Q: 14.98 Req: 0.23703
[INFO] mission number: 1, sample number: 2, trajectory id <28> with path_time: 16.01 that meets constraint: path_tim
[INFO] degradation parameters: 0.0008 14.3221 0.2398
[INFO] i: 1 mission_id: 1669 rul_hat: 18.00 flight_time: 16.02 distance: 1182.45 R0: 0.00080 Q: 14.32 Req: 0.23980
[INFO] mission number: 1, sample number: 3, trajectory id <3> with path_time: 17.83 that meets constraint: path_time
[INFO] degradation parameters: 0.0004 14.1956 0.2349
[INFO] i: 1 mission_id: 1670 rul_hat: 18.00 flight_time: 17.84 distance: 1302.16 R0: 0.00045 Q: 14.20 Req: 0.23486
[INFO] mission number: 1, sample number: 4, trajectory id <3> with path_time: 17.83 that meets constraint: path_time
[INFO] degradation parameters: 0.0008 14.8325 0.2387
[INFO] i: 1 mission_id: 1671 rul_hat: 18.00 flight_time: 17.84 distance: 1302.02 R0: 0.00082 Q: 14.83 Req: 0.23868
[INFO] mission number: 1, sample number: 5, trajectory id <3> with path_time: 17.83 that meets constraint: path_time
[INFO] degradation parameters: 0.0021 15.3164 0.2379
[INFO] i: 1 mission_id: 1672 rul_hat: 18.00 flight_time: 17.84 distance: 1302.09 R0: 0.00212 Q: 15.32 Req: 0.23788
[INFO] mission number: 1, sample number: 6, trajectory id <15> with path_time: 17.63 that meets constraint: path_tim
[INFO] degradation parameters: 0.0015 14.5483 0.2388
[INFO] i: 1 mission_id: 1673 rul_hat: 18.00 flight_time: 17.63 distance: 1283.76 R0: 0.00151 Q: 14.55 Req: 0.23882
[INFO] mission number: 1, sample number: 7, trajectory id <11> with path_time: 16.38 that meets constraint: path_tim
[INFO] degradation parameters: 0.0008 14.6823 0.2382
[INFO] i: 1 mission_id: 1674 rul_hat: 18.00 flight_time: 16.36 distance: 1218.67 R0: 0.00081 Q: 14.68 Req: 0.23821
[INFO] mission number: 1, sample number: 8, trajectory id <15> with path_time: 17.63 that meets constraint: path_tim
[INFO] degradation parameters: 0.0006 14.7124 0.2371
[INFO] i: 1 mission_id: 1675 rul_hat: 18.00 flight_time: 17.63 distance: 1283.82 R0: 0.00062 Q: 14.71 Req: 0.23715
[INFO] mission number: 1, sample number: 9, trajectory id <28> with path_time: 16.01 that meets constraint: path_tim
[INFO] degradation parameters: 0.0046 15.4430 0.2367
[INFO] i: 1 mission_id: 1676 rul_hat: 18.00 flight_time: 16.02 distance: 1182.41 R0: 0.00455 Q: 15.44 Req: 0.23668
[INFO] mission number: 1, sample number: 10, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
[INFO] degradation parameters: 0.0018 15.1282 0.2381
[INFO] i: 1 mission_id: 1677 rul_hat: 18.00 flight_time: 16.02 distance: 1182.57 R0: 0.00179 Q: 15.13 Req: 0.23813
[INFO] mission number: 1, sample number: 11, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0007 14.8614 0.2360
[INFO] i: 1 mission_id: 1678 rul_hat: 18.00 flight_time: 17.84 distance: 1302.08 R0: 0.00074 Q: 14.86 Req: 0.23604
[INFO] mission number: 1, sample number: 12, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0015 14.8176 0.2366
[INFO] i: 1 mission_id: 1679 rul_hat: 18.00 flight_time: 17.83 distance: 1301.93 R0: 0.00151 Q: 14.82 Req: 0.23655
[INFO] mission number: 1, sample number: 13, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
[INFO] degradation parameters: 0.0039 14.7822 0.2341
[INFO] i: 1 mission_id: 1680 rul_hat: 18.00 flight_time: 16.02 distance: 1182.43 R0: 0.00389 Q: 14.78 Req: 0.23409
[INFO] mission number: 1, sample number: 14, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0017 14.7522 0.2380
[INFO] i: 1 mission_id: 1681 rul_hat: 18.00 flight_time: 17.63 distance: 1283.83 R0: 0.00171 Q: 14.75 Req: 0.23799
[INFO] mission number: 1, sample number: 15, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0001 14.6959 0.2371
[INFO] i: 1 mission_id: 1682 rul_hat: 18.00 flight_time: 17.63 distance: 1283.77 R0: 0.00010 Q: 14.70 Req: 0.23712
[INFO] mission number: 1, sample number: 16, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0038 13.9880 0.2390
[INFO] i: 1 mission_id: 1683 rul_hat: 18.00 flight_time: 17.63 distance: 1283.64 R0: 0.00385 Q: 13.99 Req: 0.23897
[INFO] mission number: 1, sample number: 17, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0009 15.5000 0.2373
[INFO] i: 1 mission_id: 1684 rul_hat: 18.00 flight_time: 17.84 distance: 1302.00 R0: 0.00091 Q: 15.50 Req: 0.23730
[INFO] mission number: 1, sample number: 18, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0010 15.2204 0.2380

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```
[INFO] i: 1 mission_id: 1685 rul_hat: 18.00 flight_time: 17.84 distance: 1302.03 R0: 0.00103 Q: 15.22 Req: 0.23795
[INFO] mission number: 1, sample number: 19, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0056 12.8575 0.2416
[INFO] i: 1 mission_id: 1686 rul_hat: 18.00 flight_time: 17.63 distance: 1283.76 R0: 0.00557 Q: 12.86 Req: 0.24156
[INFO] mission number: 1, sample number: 20, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0005 15.4010 0.2338
[INFO] i: 1 mission_id: 1687 rul_hat: 18.00 flight_time: 17.63 distance: 1283.62 R0: 0.00049 Q: 15.40 Req: 0.23376
[INFO] mission number: 1, sample number: 21, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0025 15.3103 0.2393
[INFO] i: 1 mission_id: 1688 rul_hat: 18.00 flight_time: 17.63 distance: 1283.72 R0: 0.00254 Q: 15.31 Req: 0.23927
[INFO] mission number: 1, sample number: 22, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0018 15.5000 0.2371
[INFO] i: 1 mission_id: 1689 rul_hat: 18.00 flight_time: 17.84 distance: 1302.06 R0: 0.00184 Q: 15.50 Req: 0.23710
[INFO] mission number: 1, sample number: 23, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
[INFO] degradation parameters: 0.0024 15.3322 0.2396
[INFO] i: 1 mission_id: 1690 rul_hat: 18.00 flight_time: 16.02 distance: 1182.41 R0: 0.00244 Q: 15.33 Req: 0.23960
[INFO] mission number: 1, sample number: 24, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0037 13.4709 0.2371
[INFO] i: 1 mission_id: 1691 rul_hat: 18.00 flight_time: 17.84 distance: 1301.99 R0: 0.00375 Q: 13.47 Req: 0.23705
[INFO] mission number: 1, sample number: 25, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
[INFO] degradation parameters: 0.0030 15.0011 0.2370
[INFO] i: 1 mission_id: 1692 rul_hat: 18.00 flight_time: 16.02 distance: 1182.47 R0: 0.00305 Q: 15.00 Req: 0.23696
Elapsed time is 5712.657628 seconds.
[INFO] mission number: 2, sample number: 1, trajectory id <11> with path_time: 16.38 that meets constraint: path_tim
[INFO] degradation parameters: 0.0038 12.7887 0.2377
[INFO] i: 2 mission_id: 1693 rul_hat: 18.33 flight_time: 16.36 distance: 1218.71 R0: 0.00383 Q: 12.79 Req: 0.23773
[INFO] mission number: 2, sample number: 2, trajectory id <28> with path_time: 16.01 that meets constraint: path_tim
[INFO] degradation parameters: 0.0026 15.5000 0.2362
[INFO] i: 2 mission_id: 1694 rul_hat: 18.33 flight_time: 16.02 distance: 1182.46 R0: 0.00264 Q: 15.50 Req: 0.23619
[INFO] mission number: 2, sample number: 3, trajectory id <11> with path_time: 16.38 that meets constraint: path_tim
[INFO] degradation parameters: 0.0030 15.4976 0.2394
[INFO] i: 2 mission_id: 1695 rul_hat: 18.33 flight_time: 16.36 distance: 1218.68 R0: 0.00297 Q: 15.50 Req: 0.23937
[INFO] mission number: 2, sample number: 4, trajectory id <15> with path_time: 17.63 that meets constraint: path_tim
[INFO] degradation parameters: 0.0033 12.9743 0.2366
[INFO] i: 2 mission_id: 1696 rul_hat: 18.33 flight_time: 17.63 distance: 1283.75 R0: 0.00334 Q: 12.97 Req: 0.23657
[INFO] mission number: 2, sample number: 5, trajectory id <15> with path_time: 17.63 that meets constraint: path_tim
[INFO] degradation parameters: 0.0025 15.5000 0.2355
[INFO] i: 2 mission_id: 1697 rul_hat: 18.33 flight_time: 17.63 distance: 1283.67 R0: 0.00254 Q: 15.50 Req: 0.23554
[INFO] mission number: 2, sample number: 6, trajectory id <11> with path_time: 16.38 that meets constraint: path_tim
[INFO] degradation parameters: 0.0005 15.2753 0.2384
[INFO] i: 2 mission_id: 1698 rul_hat: 18.33 flight_time: 16.36 distance: 1218.66 R0: 0.00045 Q: 15.28 Req: 0.23837
[INFO] mission number: 2, sample number: 7, trajectory id <15> with path_time: 17.63 that meets constraint: path_tim
[INFO] degradation parameters: 0.0036 15.5000 0.2363
[INFO] i: 2 mission_id: 1699 rul_hat: 18.33 flight_time: 17.63 distance: 1283.60 R0: 0.00360 Q: 15.50 Req: 0.23632
[INFO] mission number: 2, sample number: 8, trajectory id <15> with path_time: 17.63 that meets constraint: path_tim
[INFO] degradation parameters: 0.0020 14.9692 0.2365
[INFO] i: 2 mission_id: 1700 rul_hat: 18.33 flight_time: 17.63 distance: 1283.67 R0: 0.00205 Q: 14.97 Req: 0.23645
[INFO] mission number: 2, sample number: 9, trajectory id <11> with path_time: 16.38 that meets constraint: path_tim
[INFO] degradation parameters: 0.0020 14.7470 0.2379
[INFO] i: 2 mission_id: 1701 rul_hat: 18.33 flight_time: 16.36 distance: 1218.67 R0: 0.00204 Q: 14.75 Req: 0.23790
[INFO] mission number: 2, sample number: 10, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0018 14.2451 0.2340
[INFO] i: 2 mission_id: 1702 rul_hat: 18.33 flight_time: 16.36 distance: 1218.72 R0: 0.00184 Q: 14.25 Req: 0.23396
[INFO] mission number: 2, sample number: 11, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0024 15.0968 0.2358
[INFO] i: 2 mission_id: 1703 rul_hat: 18.33 flight_time: 16.36 distance: 1218.63 R0: 0.00238 Q: 15.10 Req: 0.23577
[INFO] mission number: 2, sample number: 12, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0044 14.1723 0.2391
[INFO] i: 2 mission_id: 1704 rul_hat: 18.33 flight_time: 17.63 distance: 1283.74 R0: 0.00438 Q: 14.17 Req: 0.23914
[INFO] mission number: 2, sample number: 13, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0012 14.7194 0.2374
[INFO] i: 2 mission_id: 1705 rul_hat: 18.33 flight_time: 17.63 distance: 1283.82 R0: 0.00123 Q: 14.72 Req: 0.23740
[INFO] mission number: 2, sample number: 14, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0007 14.8996 0.2382
[INFO] i: 2 mission_id: 1706 rul_hat: 18.33 flight_time: 16.36 distance: 1218.67 R0: 0.00074 Q: 14.90 Req: 0.23825
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[INFO] mission number: 2, sample number: 15, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0019 13.2473 0.2396
[INFO] i: 2 mission_id: 1707 rul_hat: 18.33 flight_time: 17.63 distance: 1283.70 R0: 0.00188 Q: 13.25 Req: 0.23965
[INFO] mission number: 2, sample number: 16, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0012 15.5000 0.2395
[INFO] i: 2 mission_id: 1708 rul_hat: 18.33 flight_time: 16.36 distance: 1218.60 R0: 0.00123 Q: 15.50 Req: 0.23946
[INFO] mission number: 2, sample number: 17, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0004 14.4482 0.2355
[INFO] i: 2 mission_id: 1709 rul_hat: 18.33 flight_time: 17.84 distance: 1302.03 R0: 0.00042 Q: 14.45 Req: 0.23552
[INFO] mission number: 2, sample number: 18, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0026 15.5000 0.2373
[INFO] i: 2 mission_id: 1710 rul_hat: 18.33 flight_time: 17.63 distance: 1283.81 R0: 0.00265 Q: 15.50 Req: 0.23734
[INFO] mission number: 2, sample number: 19, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0022 13.5820 0.2355
[INFO] i: 2 mission_id: 1711 rul_hat: 18.33 flight_time: 16.36 distance: 1218.67 R0: 0.00222 Q: 13.58 Req: 0.23553
[INFO] mission number: 2, sample number: 20, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0037 14.7139 0.2401
[INFO] i: 2 mission_id: 1712 rul_hat: 18.33 flight_time: 16.36 distance: 1218.71 R0: 0.00365 Q: 14.71 Req: 0.24010
[INFO] mission number: 2, sample number: 21, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0022 15.1365 0.2392
[INFO] i: 2 mission_id: 1713 rul_hat: 18.33 flight_time: 17.63 distance: 1283.78 R0: 0.00217 Q: 15.14 Req: 0.23921
[INFO] mission number: 2, sample number: 22, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0004 13.9487 0.2366
[INFO] i: 2 mission_id: 1714 rul_hat: 18.33 flight_time: 17.84 distance: 1302.04 R0: 0.00042 Q: 13.95 Req: 0.23659
[INFO] mission number: 2, sample number: 23, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0010 15.5000 0.2378
[INFO] i: 2 mission_id: 1715 rul_hat: 18.33 flight_time: 16.36 distance: 1218.63 R0: 0.00096 Q: 15.50 Req: 0.23779
[INFO] mission number: 2, sample number: 24, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0024 15.5000 0.2332
[INFO] i: 2 mission_id: 1716 rul_hat: 18.33 flight_time: 17.63 distance: 1283.81 R0: 0.00243 Q: 15.50 Req: 0.23320
[INFO] mission number: 2, sample number: 25, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0020 15.5000 0.2369
[INFO] i: 2 mission_id: 1717 rul_hat: 18.33 flight_time: 17.83 distance: 1301.89 R0: 0.00200 Q: 15.50 Req: 0.23692
Elapsed time is 5917.784503 seconds.
[INFO] mission number: 3, sample number: 1, trajectory id <11> with path_time: 16.38 that meets constraint: path_tim
[INFO] degradation parameters: 0.0006 15.5000 0.2380
[INFO] i: 3 mission_id: 1718 rul_hat: 18.66 flight_time: 16.36 distance: 1218.67 R0: 0.00058 Q: 15.50 Req: 0.23799
[INFO] mission number: 3, sample number: 2, trajectory id <3> with path_time: 17.83 that meets constraint: path_time
[INFO] degradation parameters: 0.0025 14.9254 0.2358
[INFO] i: 3 mission_id: 1719 rul_hat: 18.66 flight_time: 17.83 distance: 1301.95 R0: 0.00248 Q: 14.93 Req: 0.23581
[INFO] mission number: 3, sample number: 3, trajectory id <11> with path_time: 16.38 that meets constraint: path_tim
[INFO] degradation parameters: 0.0011 15.5000 0.2368
[INFO] i: 3 mission_id: 1720 rul_hat: 18.66 flight_time: 16.36 distance: 1218.60 R0: 0.00112 Q: 15.50 Req: 0.23677
[INFO] mission number: 3, sample number: 4, trajectory id <3> with path_time: 17.83 that meets constraint: path_time
[INFO] degradation parameters: 0.0020 15.5000 0.2387
[INFO] i: 3 mission_id: 1721 rul_hat: 18.66 flight_time: 17.83 distance: 1301.95 R0: 0.00201 Q: 15.50 Req: 0.23865
[INFO] mission number: 3, sample number: 5, trajectory id <11> with path_time: 16.38 that meets constraint: path_tim
[INFO] degradation parameters: 0.0029 15.0915 0.2392
[INFO] i: 3 mission_id: 1722 rul_hat: 18.66 flight_time: 16.36 distance: 1218.59 R0: 0.00292 Q: 15.09 Req: 0.23919
[INFO] mission number: 3, sample number: 6, trajectory id <11> with path_time: 16.38 that meets constraint: path_tim
[INFO] degradation parameters: 0.0004 14.8524 0.2392
[INFO] i: 3 mission_id: 1723 rul_hat: 18.66 flight_time: 16.36 distance: 1218.69 R0: 0.00042 Q: 14.85 Req: 0.23924
[INFO] mission number: 3, sample number: 7, trajectory id <15> with path_time: 17.63 that meets constraint: path_tim
[INFO] degradation parameters: 0.0016 15.3949 0.2368
[INFO] i: 3 mission_id: 1724 rul_hat: 18.66 flight_time: 17.63 distance: 1283.73 R0: 0.00162 Q: 15.39 Req: 0.23682
[INFO] mission number: 3, sample number: 8, trajectory id <11> with path_time: 16.38 that meets constraint: path_tim
[INFO] degradation parameters: 0.0013 15.5000 0.2368
[INFO] i: 3 mission_id: 1725 rul_hat: 18.66 flight_time: 16.36 distance: 1218.65 R0: 0.00133 Q: 15.50 Req: 0.23684
[INFO] mission number: 3, sample number: 9, trajectory id <3> with path_time: 17.83 that meets constraint: path_time
[INFO] degradation parameters: 0.0031 15.5000 0.2379
[INFO] i: 3 mission_id: 1726 rul_hat: 18.66 flight_time: 17.83 distance: 1301.92 R0: 0.00314 Q: 15.50 Req: 0.23789
[INFO] mission number: 3, sample number: 10, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0018 15.0846 0.2389
[INFO] i: 3 mission_id: 1727 rul_hat: 18.66 flight_time: 16.36 distance: 1218.57 R0: 0.00177 Q: 15.08 Req: 0.23893
[INFO] mission number: 3, sample number: 11, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
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[INFO] degradation parameters: 0.0015 13.2183 0.2358
[INFO] i: 3 mission_id: 1728 rul_hat: 18.66 flight_time: 16.02 distance: 1182.37 R0: 0.00152 Q: 13.22 Req: 0.23577
[INFO] mission number: 3, sample number: 12, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0007 14.7701 0.2391
[INFO] i: 3 mission_id: 1729 rul_hat: 18.66 flight_time: 17.63 distance: 1283.81 R0: 0.00075 Q: 14.77 Req: 0.23913
[INFO] mission number: 3, sample number: 13, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
[INFO] degradation parameters: 0.0051 15.5000 0.2355
[INFO] i: 3 mission_id: 1730 rul_hat: 18.66 flight_time: 16.02 distance: 1182.53 R0: 0.00514 Q: 15.50 Req: 0.23549
[INFO] mission number: 3, sample number: 14, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0030 15.0408 0.2381
[INFO] i: 3 mission_id: 1731 rul_hat: 18.66 flight_time: 16.36 distance: 1218.67 R0: 0.00302 Q: 15.04 Req: 0.23812
[INFO] mission number: 3, sample number: 15, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0017 15.0439 0.2368
[INFO] i: 3 mission_id: 1732 rul_hat: 18.66 flight_time: 16.36 distance: 1218.61 R0: 0.00167 Q: 15.04 Req: 0.23684
[INFO] mission number: 3, sample number: 16, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0019 13.9982 0.2407
[INFO] i: 3 mission_id: 1733 rul_hat: 18.66 flight_time: 16.36 distance: 1218.61 R0: 0.00191 Q: 14.00 Req: 0.24071
[INFO] mission number: 3, sample number: 17, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0031 14.6927 0.2401
[INFO] i: 3 mission_id: 1734 rul_hat: 18.66 flight_time: 17.63 distance: 1283.73 R0: 0.00311 Q: 14.69 Req: 0.24011
[INFO] mission number: 3, sample number: 18, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0025 14.7753 0.2363
[INFO] i: 3 mission_id: 1735 rul_hat: 18.66 flight_time: 16.36 distance: 1218.65 R0: 0.00254 Q: 14.78 Req: 0.23632
[INFO] mission number: 3, sample number: 19, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0001 14.5897 0.2400
[INFO] i: 3 mission_id: 1736 rul_hat: 18.66 flight_time: 17.63 distance: 1283.80 R0: 0.00015 Q: 14.59 Req: 0.24002
[INFO] mission number: 3, sample number: 20, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
[INFO] degradation parameters: 0.0001 15.5000 0.2370
[INFO] i: 3 mission_id: 1737 rul_hat: 18.66 flight_time: 16.02 distance: 1182.35 R0: 0.00010 Q: 15.50 Req: 0.23701
[INFO] mission number: 3, sample number: 21, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0056 15.5000 0.2372
[INFO] i: 3 mission_id: 1738 rul_hat: 18.66 flight_time: 17.83 distance: 1301.84 R0: 0.00557 Q: 15.50 Req: 0.23719
[INFO] mission number: 3, sample number: 22, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0027 15.5000 0.2348
[INFO] i: 3 mission_id: 1739 rul_hat: 18.66 flight_time: 17.63 distance: 1283.61 R0: 0.00268 Q: 15.50 Req: 0.23484
[INFO] mission number: 3, sample number: 23, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
[INFO] degradation parameters: 0.0015 13.8038 0.2337
[INFO] i: 3 mission_id: 1740 rul_hat: 18.66 flight_time: 16.02 distance: 1182.42 R0: 0.00147 Q: 13.80 Req: 0.23367
[INFO] mission number: 3, sample number: 24, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0018 15.3698 0.2369
[INFO] i: 3 mission_id: 1741 rul_hat: 18.66 flight_time: 16.36 distance: 1218.62 R0: 0.00183 Q: 15.37 Req: 0.23690
[INFO] mission number: 3, sample number: 25, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0006 14.2007 0.2391
[INFO] i: 3 mission_id: 1742 rul_hat: 18.66 flight_time: 17.83 distance: 1301.94 R0: 0.00057 Q: 14.20 Req: 0.23909
Elapsed time is 5731.578863 seconds.
[INFO] mission number: 4, sample number: 1, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0011 14.3115 0.2372
[INFO] i: 4 mission_id: 1743 rul_hat: 18.99 flight_time: 18.77 distance: 1386.84 R0: 0.00111 Q: 14.31 Req: 0.23720
[INFO] mission number: 4, sample number: 2, trajectory id <11> with path_time: 16.38 that meets constraint: path_tim
[INFO] degradation parameters: 0.0027 15.5000 0.2395
[INFO] i: 4 mission_id: 1744 rul_hat: 18.99 flight_time: 16.36 distance: 1218.68 R0: 0.00267 Q: 15.50 Req: 0.23948
[INFO] mission number: 4, sample number: 3, trajectory id <11> with path_time: 16.38 that meets constraint: path_tim
[INFO] degradation parameters: 0.0001 14.9632 0.2404
[INFO] i: 4 mission_id: 1745 rul_hat: 18.99 flight_time: 16.36 distance: 1218.55 R0: 0.00010 Q: 14.96 Req: 0.24037
[INFO] mission number: 4, sample number: 4, trajectory id <11> with path_time: 16.38 that meets constraint: path_tim
[INFO] degradation parameters: 0.0035 15.2425 0.2370
[INFO] i: 4 mission_id: 1746 rul_hat: 18.99 flight_time: 16.36 distance: 1218.68 R0: 0.00346 Q: 15.24 Req: 0.23698
[INFO] mission number: 4, sample number: 5, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0017 15.5000 0.2390
[INFO] i: 4 mission_id: 1747 rul_hat: 18.99 flight_time: 18.77 distance: 1386.82 R0: 0.00166 Q: 15.50 Req: 0.23896
[INFO] mission number: 4, sample number: 6, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0038 14.9245 0.2397
[INFO] i: 4 mission_id: 1748 rul_hat: 18.99 flight_time: 18.77 distance: 1386.80 R0: 0.00381 Q: 14.92 Req: 0.23970
[INFO] mission number: 4, sample number: 7, trajectory id <15> with path_time: 17.63 that meets constraint: path_tim
[INFO] degradation parameters: 0.0025 13.6742 0.2392
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[INFO] i: 4 mission_id: 1749 rul_hat: 18.99 flight_time: 17.63 distance: 1283.78 R0: 0.00245 Q: 13.67 Req: 0.23923
[INFO] mission number: 4, sample number: 8, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0010 13.1669 0.2343
[INFO] i: 4 mission_id: 1750 rul_hat: 18.99 flight_time: 18.77 distance: 1386.83 R0: 0.00104 Q: 13.17 Req: 0.23428
[INFO] mission number: 4, sample number: 9, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0014 13.3290 0.2391
[INFO] i: 4 mission_id: 1751 rul_hat: 18.99 flight_time: 18.77 distance: 1386.83 R0: 0.00144 Q: 13.33 Req: 0.23911
[INFO] mission number: 4, sample number: 10, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0029 14.9638 0.2387
[INFO] i: 4 mission_id: 1752 rul_hat: 18.99 flight_time: 17.63 distance: 1283.74 R0: 0.00287 Q: 14.96 Req: 0.23872
[INFO] mission number: 4, sample number: 11, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0010 15.5000 0.2420
[INFO] i: 4 mission_id: 1753 rul_hat: 18.99 flight_time: 18.77 distance: 1386.86 R0: 0.00103 Q: 15.50 Req: 0.24201
[INFO] mission number: 4, sample number: 12, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0015 15.3228 0.2381
[INFO] i: 4 mission_id: 1754 rul_hat: 18.99 flight_time: 18.77 distance: 1386.82 R0: 0.00149 Q: 15.32 Req: 0.23808
[INFO] mission number: 4, sample number: 13, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0042 14.4821 0.2359
[INFO] i: 4 mission_id: 1755 rul_hat: 18.99 flight_time: 16.36 distance: 1218.69 R0: 0.00419 Q: 14.48 Req: 0.23589
[INFO] mission number: 4, sample number: 14, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0014 14.2916 0.2401
[INFO] i: 4 mission_id: 1756 rul_hat: 18.99 flight_time: 17.63 distance: 1283.67 R0: 0.00143 Q: 14.29 Req: 0.24009
[INFO] mission number: 4, sample number: 15, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0026 15.5000 0.2407
[INFO] i: 4 mission_id: 1757 rul_hat: 18.99 flight_time: 16.36 distance: 1218.66 R0: 0.00262 Q: 15.50 Req: 0.24066
[INFO] mission number: 4, sample number: 16, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0006 14.4308 0.2396
[INFO] i: 4 mission_id: 1758 rul_hat: 18.99 flight_time: 17.84 distance: 1302.04 R0: 0.00056 Q: 14.43 Req: 0.23964
[INFO] mission number: 4, sample number: 17, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0002 14.8132 0.2394
[INFO] i: 4 mission_id: 1759 rul_hat: 18.99 flight_time: 17.84 distance: 1302.10 R0: 0.00022 Q: 14.81 Req: 0.23935
[INFO] mission number: 4, sample number: 18, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0013 15.5000 0.2381
[INFO] i: 4 mission_id: 1760 rul_hat: 18.99 flight_time: 16.36 distance: 1218.70 R0: 0.00130 Q: 15.50 Req: 0.23811
[INFO] mission number: 4, sample number: 19, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0019 15.2604 0.2380
[INFO] i: 4 mission_id: 1761 rul_hat: 18.99 flight_time: 18.77 distance: 1386.78 R0: 0.00190 Q: 15.26 Req: 0.23803
[INFO] mission number: 4, sample number: 20, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0008 15.5000 0.2396
[INFO] i: 4 mission_id: 1762 rul_hat: 18.99 flight_time: 17.84 distance: 1302.05 R0: 0.00077 Q: 15.50 Req: 0.23964
[INFO] mission number: 4, sample number: 21, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0013 13.6228 0.2387
[INFO] i: 4 mission_id: 1763 rul_hat: 18.99 flight_time: 18.77 distance: 1386.81 R0: 0.00128 Q: 13.62 Req: 0.23865
[INFO] mission number: 4, sample number: 22, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0019 15.5000 0.2394
[INFO] i: 4 mission_id: 1764 rul_hat: 18.99 flight_time: 18.77 distance: 1386.74 R0: 0.00185 Q: 15.50 Req: 0.23941
[INFO] mission number: 4, sample number: 23, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0008 15.3593 0.2392
[INFO] i: 4 mission_id: 1765 rul_hat: 18.99 flight_time: 16.36 distance: 1218.65 R0: 0.00084 Q: 15.36 Req: 0.23923
[INFO] mission number: 4, sample number: 24, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0018 14.4774 0.2367
[INFO] i: 4 mission_id: 1766 rul_hat: 18.99 flight_time: 18.77 distance: 1386.83 R0: 0.00184 Q: 14.48 Req: 0.23674
[INFO] mission number: 4, sample number: 25, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0008 14.8018 0.2361
[INFO] i: 4 mission_id: 1767 rul_hat: 18.99 flight_time: 16.36 distance: 1218.63 R0: 0.00078 Q: 14.80 Req: 0.23612
Elapsed time is 5871.524626 seconds.
[INFO] mission number: 5, sample number: 1, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0045 13.9231 0.2362
[INFO] i: 5 mission_id: 1768 rul_hat: 19.32 flight_time: 18.77 distance: 1386.80 R0: 0.00450 Q: 13.92 Req: 0.23616
[INFO] mission number: 5, sample number: 2, trajectory id <3> with path_time: 17.83 that meets constraint: path_time
[INFO] degradation parameters: 0.0004 15.5000 0.2379
[INFO] i: 5 mission_id: 1769 rul_hat: 19.32 flight_time: 17.84 distance: 1302.04 R0: 0.00041 Q: 15.50 Req: 0.23787
[INFO] mission number: 5, sample number: 3, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0001 13.6850 0.2391
[INFO] i: 5 mission_id: 1770 rul_hat: 19.32 flight_time: 18.77 distance: 1386.83 R0: 0.00010 Q: 13.68 Req: 0.23908
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[INFO] mission number: 5, sample number: 4, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0043 15.5000 0.2393
[INFO] i: 5 mission_id: 1771 rul_hat: 19.32 flight_time: 18.77 distance: 1386.86 R0: 0.00433 Q: 15.50 Req: 0.23926
[INFO] mission number: 5, sample number: 5, trajectory id <11> with path_time: 16.38 that meets constraint: path_tim
[INFO] degradation parameters: 0.0002 14.5086 0.2408
[INFO] i: 5 mission_id: 1772 rul_hat: 19.32 flight_time: 16.36 distance: 1218.66 R0: 0.00020 Q: 14.51 Req: 0.24079
[INFO] mission number: 5, sample number: 6, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0021 15.3345 0.2392
[INFO] i: 5 mission_id: 1773 rul_hat: 19.32 flight_time: 18.77 distance: 1386.78 R0: 0.00206 Q: 15.33 Req: 0.23921
[INFO] mission number: 5, sample number: 7, trajectory id <15> with path_time: 17.63 that meets constraint: path_tim
[INFO] degradation parameters: 0.0001 13.8222 0.2403
[INFO] i: 5 mission_id: 1774 rul_hat: 19.32 flight_time: 17.63 distance: 1283.81 R0: 0.00010 Q: 13.82 Req: 0.24031
[INFO] mission number: 5, sample number: 8, trajectory id <15> with path_time: 17.63 that meets constraint: path_tim
[INFO] degradation parameters: 0.0026 14.2021 0.2359
[INFO] i: 5 mission_id: 1775 rul_hat: 19.32 flight_time: 17.63 distance: 1283.72 R0: 0.00259 Q: 14.20 Req: 0.23592
[INFO] mission number: 5, sample number: 9, trajectory id <3> with path_time: 17.83 that meets constraint: path_time
[INFO] degradation parameters: 0.0038 15.5000 0.2411
[INFO] i: 5 mission_id: 1776 rul_hat: 19.32 flight_time: 17.83 distance: 1301.94 R0: 0.00380 Q: 15.50 Req: 0.24112
[INFO] mission number: 5, sample number: 10, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0016 15.4267 0.2446
[INFO] i: 5 mission_id: 1777 rul_hat: 19.32 flight_time: 18.77 distance: 1386.78 R0: 0.00164 Q: 15.43 Req: 0.24459
[INFO] mission number: 5, sample number: 11, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0030 13.8839 0.2362
[INFO] i: 5 mission_id: 1778 rul_hat: 19.32 flight_time: 18.77 distance: 1386.82 R0: 0.00297 Q: 13.88 Req: 0.23617
[INFO] mission number: 5, sample number: 12, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0018 15.5000 0.2398
[INFO] i: 5 mission_id: 1779 rul_hat: 19.32 flight_time: 17.84 distance: 1302.07 R0: 0.00184 Q: 15.50 Req: 0.23982
[INFO] mission number: 5, sample number: 13, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0020 15.3452 0.2398
[INFO] i: 5 mission_id: 1780 rul_hat: 19.32 flight_time: 17.84 distance: 1302.06 R0: 0.00199 Q: 15.35 Req: 0.23983
[INFO] mission number: 5, sample number: 14, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0002 15.5000 0.2353
[INFO] i: 5 mission_id: 1781 rul_hat: 19.32 flight_time: 18.77 distance: 1386.85 R0: 0.00015 Q: 15.50 Req: 0.23531
[INFO] mission number: 5, sample number: 15, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0003 15.4071 0.2389
[INFO] i: 5 mission_id: 1782 rul_hat: 19.32 flight_time: 17.63 distance: 1283.78 R0: 0.00031 Q: 15.41 Req: 0.23887
[INFO] mission number: 5, sample number: 16, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0005 14.5655 0.2376
[INFO] i: 5 mission_id: 1783 rul_hat: 19.32 flight_time: 16.36 distance: 1218.67 R0: 0.00053 Q: 14.57 Req: 0.23759
[INFO] mission number: 5, sample number: 17, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0003 14.4387 0.2372
[INFO] i: 5 mission_id: 1784 rul_hat: 19.32 flight_time: 18.77 distance: 1386.83 R0: 0.00026 Q: 14.44 Req: 0.23719
[INFO] mission number: 5, sample number: 18, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0008 15.2179 0.2403
[INFO] i: 5 mission_id: 1785 rul_hat: 19.32 flight_time: 16.36 distance: 1218.70 R0: 0.00078 Q: 15.22 Req: 0.24030
[INFO] mission number: 5, sample number: 19, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0017 15.5000 0.2370
[INFO] i: 5 mission_id: 1786 rul_hat: 19.32 flight_time: 17.63 distance: 1283.60 R0: 0.00166 Q: 15.50 Req: 0.23704
[INFO] mission number: 5, sample number: 20, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0010 15.3802 0.2383
[INFO] i: 5 mission_id: 1787 rul_hat: 19.32 flight_time: 16.36 distance: 1218.74 R0: 0.00100 Q: 15.38 Req: 0.23829
[INFO] mission number: 5, sample number: 21, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0025 14.6823 0.2386
[INFO] i: 5 mission_id: 1788 rul_hat: 19.32 flight_time: 18.77 distance: 1386.81 R0: 0.00251 Q: 14.68 Req: 0.23862
[INFO] mission number: 5, sample number: 22, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0005 15.5000 0.2402
[INFO] i: 5 mission_id: 1789 rul_hat: 19.32 flight_time: 18.77 distance: 1386.79 R0: 0.00046 Q: 15.50 Req: 0.24021
[INFO] mission number: 5, sample number: 23, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0001 15.1573 0.2409
[INFO] i: 5 mission_id: 1790 rul_hat: 19.32 flight_time: 18.77 distance: 1386.79 R0: 0.00011 Q: 15.16 Req: 0.24090
[INFO] mission number: 5, sample number: 24, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0018 13.8421 0.2371
[INFO] i: 5 mission_id: 1791 rul_hat: 19.32 flight_time: 18.77 distance: 1386.80 R0: 0.00181 Q: 13.84 Req: 0.23709
[INFO] mission number: 5, sample number: 25, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0005 14.1005 0.2384
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[INFO] i: 5 mission_id: 1792 rul_hat: 19.32 flight_time: 18.77 distance: 1386.79 R0: 0.00054 Q: 14.10 Req: 0.23844
Elapsed time is 5893.773474 seconds.
[INFO] mission number: 6, sample number: 1, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0001 15.5000 0.2407
[INFO] i: 6 mission_id: 1793 rul_hat: 19.65 flight_time: 18.77 distance: 1386.75 R0: 0.00010 Q: 15.50 Req: 0.24072
[INFO] mission number: 6, sample number: 2, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0024 13.0783 0.2447
[INFO] i: 6 mission_id: 1794 rul_hat: 19.65 flight_time: 18.77 distance: 1386.83 R0: 0.00241 Q: 13.08 Req: 0.24471
[INFO] mission number: 6, sample number: 3, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0023 15.5000 0.2361
[INFO] i: 6 mission_id: 1795 rul_hat: 19.65 flight_time: 18.77 distance: 1386.83 R0: 0.00235 Q: 15.50 Req: 0.23612
[INFO] mission number: 6, sample number: 4, trajectory id <3> with path_time: 17.83 that meets constraint: path_time
[INFO] degradation parameters: 0.0033 15.5000 0.2387
[INFO] i: 6 mission_id: 1796 rul_hat: 19.65 flight_time: 17.83 distance: 1301.91 R0: 0.00328 Q: 15.50 Req: 0.23867
[INFO] mission number: 6, sample number: 5, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0002 13.8335 0.2403
[INFO] i: 6 mission_id: 1797 rul_hat: 19.65 flight_time: 18.77 distance: 1386.81 R0: 0.00022 Q: 13.83 Req: 0.24029
[INFO] mission number: 6, sample number: 6, trajectory id <3> with path_time: 17.83 that meets constraint: path_time
[INFO] degradation parameters: 0.0014 15.5000 0.2397
[INFO] i: 6 mission_id: 1798 rul_hat: 19.65 flight_time: 17.84 distance: 1302.06 R0: 0.00137 Q: 15.50 Req: 0.23974
[INFO] mission number: 6, sample number: 7, trajectory id <3> with path_time: 17.83 that meets constraint: path_time
[INFO] degradation parameters: 0.0008 14.7604 0.2378
[INFO] i: 6 mission_id: 1799 rul_hat: 19.65 flight_time: 17.84 distance: 1302.07 R0: 0.00077 Q: 14.76 Req: 0.23777
[INFO] mission number: 6, sample number: 8, trajectory id <15> with path_time: 17.63 that meets constraint: path_tim
[INFO] degradation parameters: 0.0006 14.7481 0.2351
[INFO] i: 6 mission_id: 1800 rul_hat: 19.65 flight_time: 17.63 distance: 1283.68 R0: 0.00059 Q: 14.75 Req: 0.23510
[INFO] mission number: 6, sample number: 9, trajectory id <3> with path_time: 17.83 that meets constraint: path_time
[INFO] degradation parameters: 0.0003 15.4408 0.2425
[INFO] i: 6 mission_id: 1801 rul_hat: 19.65 flight_time: 17.83 distance: 1301.84 R0: 0.00029 Q: 15.44 Req: 0.24255
[INFO] mission number: 6, sample number: 10, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0023 15.5000 0.2411
[INFO] i: 6 mission_id: 1802 rul_hat: 19.65 flight_time: 16.36 distance: 1218.66 R0: 0.00225 Q: 15.50 Req: 0.24106
[INFO] mission number: 6, sample number: 11, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0009 14.2210 0.2381
[INFO] i: 6 mission_id: 1803 rul_hat: 19.65 flight_time: 17.63 distance: 1283.63 R0: 0.00094 Q: 14.22 Req: 0.23812
[INFO] mission number: 6, sample number: 12, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0056 14.9664 0.2401
[INFO] i: 6 mission_id: 1804 rul_hat: 19.65 flight_time: 17.63 distance: 1283.87 R0: 0.00559 Q: 14.97 Req: 0.24012
[INFO] mission number: 6, sample number: 13, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0014 15.4451 0.2376
[INFO] i: 6 mission_id: 1805 rul_hat: 19.65 flight_time: 16.36 distance: 1218.70 R0: 0.00143 Q: 15.45 Req: 0.23760
[INFO] mission number: 6, sample number: 14, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0002 15.0458 0.2390
[INFO] i: 6 mission_id: 1806 rul_hat: 19.65 flight_time: 17.63 distance: 1283.75 R0: 0.00015 Q: 15.05 Req: 0.23900
[INFO] mission number: 6, sample number: 15, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0004 15.5000 0.2430
[INFO] i: 6 mission_id: 1807 rul_hat: 19.65 flight_time: 18.77 distance: 1386.81 R0: 0.00044 Q: 15.50 Req: 0.24299
[INFO] mission number: 6, sample number: 16, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0046 15.1021 0.2389
[INFO] i: 6 mission_id: 1808 rul_hat: 19.65 flight_time: 16.36 distance: 1218.71 R0: 0.00459 Q: 15.10 Req: 0.23890
[INFO] mission number: 6, sample number: 17, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0004 14.5040 0.2413
[INFO] i: 6 mission_id: 1809 rul_hat: 19.65 flight_time: 16.36 distance: 1218.67 R0: 0.00042 Q: 14.50 Req: 0.24127
[INFO] mission number: 6, sample number: 18, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0023 14.5619 0.2385
[INFO] i: 6 mission_id: 1810 rul_hat: 19.65 flight_time: 17.63 distance: 1283.81 R0: 0.00226 Q: 14.56 Req: 0.23847
[INFO] mission number: 6, sample number: 19, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0009 13.4655 0.2433
[INFO] i: 6 mission_id: 1811 rul_hat: 19.65 flight_time: 16.36 distance: 1218.69 R0: 0.00089 Q: 13.47 Req: 0.24333
[INFO] mission number: 6, sample number: 20, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0070 15.4649 0.2401
[INFO] i: 6 mission_id: 1812 rul_hat: 19.65 flight_time: 17.84 distance: 1302.06 R0: 0.00696 Q: 15.46 Req: 0.24009
[INFO] mission number: 6, sample number: 21, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0027 14.5410 0.2374
[INFO] i: 6 mission_id: 1813 rul_hat: 19.65 flight_time: 18.77 distance: 1386.82 R0: 0.00272 Q: 14.54 Req: 0.23740
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[INFO] mission number: 6, sample number: 22, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0037 13.8545 0.2408
[INFO] i: 6 mission_id: 1814 rul_hat: 19.65 flight_time: 18.77 distance: 1386.79 R0: 0.00367 Q: 13.85 Req: 0.24085
[INFO] mission number: 6, sample number: 23, trajectory id <3> with path_time: 17.83 that meets constraint: path_time
[INFO] degradation parameters: 0.0003 15.4883 0.2379
[INFO] i: 6 mission_id: 1815 rul_hat: 19.65 flight_time: 17.84 distance: 1302.03 R0: 0.00035 Q: 15.49 Req: 0.23795
[INFO] mission number: 6, sample number: 24, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0002 15.2852 0.2388
[INFO] i: 6 mission_id: 1816 rul_hat: 19.65 flight_time: 17.63 distance: 1283.85 R0: 0.00021 Q: 15.29 Req: 0.23880
[INFO] mission number: 6, sample number: 25, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0022 15.5000 0.2416
[INFO] i: 6 mission_id: 1817 rul_hat: 19.65 flight_time: 18.77 distance: 1386.79 R0: 0.00217 Q: 15.50 Req: 0.24158
Elapsed time is 5905.594319 seconds.
[INFO] mission number: 7, sample number: 1, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0085 15.5000 0.2447
[INFO] i: 7 mission_id: 1818 rul_hat: 19.98 flight_time: 18.77 distance: 1386.82 R0: 0.00855 Q: 15.50 Req: 0.24471
[INFO] mission number: 7, sample number: 2, trajectory id <2> with path_time: 19.92 that meets constraint: path_time
[INFO] degradation parameters: 0.0006 15.5000 0.2434
[INFO] i: 7 mission_id: 1819 rul_hat: 19.98 flight_time: 19.93 distance: 1464.67 R0: 0.00056 Q: 15.50 Req: 0.24340
[INFO] mission number: 7, sample number: 3, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0005 13.3122 0.2355
[INFO] i: 7 mission_id: 1820 rul_hat: 19.98 flight_time: 18.77 distance: 1386.84 R0: 0.00051 Q: 13.31 Req: 0.23547
[INFO] mission number: 7, sample number: 4, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0002 12.0541 0.2438
[INFO] i: 7 mission_id: 1821 rul_hat: 19.98 flight_time: 19.63 distance: 1449.31 R0: 0.00022 Q: 12.05 Req: 0.24377
[INFO] mission number: 7, sample number: 5, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0055 15.5000 0.2387
[INFO] i: 7 mission_id: 1822 rul_hat: 19.98 flight_time: 18.60 distance: 1369.11 R0: 0.00552 Q: 15.50 Req: 0.23868
[INFO] mission number: 7, sample number: 6, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0012 13.8707 0.2396
[INFO] i: 7 mission_id: 1823 rul_hat: 19.98 flight_time: 18.77 distance: 1386.85 R0: 0.00117 Q: 13.87 Req: 0.23958
[INFO] mission number: 7, sample number: 7, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0003 13.6983 0.2542
[INFO] i: 7 mission_id: 1824 rul_hat: 19.98 flight_time: 18.77 distance: 1386.81 R0: 0.00032 Q: 13.70 Req: 0.25416
[INFO] mission number: 7, sample number: 8, trajectory id <3> with path_time: 17.83 that meets constraint: path_time
[INFO] degradation parameters: 0.0006 14.8906 0.2392
[INFO] i: 7 mission_id: 1825 rul_hat: 19.98 flight_time: 17.84 distance: 1302.11 R0: 0.00061 Q: 14.89 Req: 0.23918
[INFO] mission number: 7, sample number: 9, trajectory id <20> with path_time: 19.65 that meets constraint: path_tim
[INFO] degradation parameters: 0.0011 15.5000 0.2432
[INFO] i: 7 mission_id: 1826 rul_hat: 19.98 flight_time: 19.63 distance: 1449.11 R0: 0.00114 Q: 15.50 Req: 0.24319
[INFO] mission number: 7, sample number: 10, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0006 15.5000 0.2501
[INFO] i: 7 mission_id: 1827 rul_hat: 19.98 flight_time: 19.63 distance: 1449.20 R0: 0.00064 Q: 15.50 Req: 0.25014
[INFO] mission number: 7, sample number: 11, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0021 15.5000 0.2427
[INFO] i: 7 mission_id: 1828 rul_hat: 19.98 flight_time: 17.84 distance: 1302.06 R0: 0.00211 Q: 15.50 Req: 0.24271
[INFO] mission number: 7, sample number: 12, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0018 14.3775 0.2437
[INFO] i: 7 mission_id: 1829 rul_hat: 19.98 flight_time: 17.84 distance: 1302.02 R0: 0.00182 Q: 14.38 Req: 0.24373
[INFO] mission number: 7, sample number: 13, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0026 14.4404 0.2424
[INFO] i: 7 mission_id: 1830 rul_hat: 19.98 flight_time: 19.63 distance: 1449.17 R0: 0.00262 Q: 14.44 Req: 0.24236
[INFO] mission number: 7, sample number: 14, trajectory id <2> with path_time: 19.92 that meets constraint: path_tim
[INFO] degradation parameters: 0.0003 15.5000 0.2381
[INFO] i: 7 mission_id: 1831 rul_hat: 19.98 flight_time: 19.93 distance: 1464.74 R0: 0.00025 Q: 15.50 Req: 0.23813
[INFO] mission number: 7, sample number: 15, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0005 15.4873 0.2403
[INFO] i: 7 mission_id: 1832 rul_hat: 19.98 flight_time: 18.77 distance: 1386.80 R0: 0.00046 Q: 15.49 Req: 0.24027
[INFO] mission number: 7, sample number: 16, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0013 14.8214 0.2398
[INFO] i: 7 mission_id: 1833 rul_hat: 19.98 flight_time: 19.63 distance: 1449.14 R0: 0.00132 Q: 14.82 Req: 0.23983
[INFO] mission number: 7, sample number: 17, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0068 15.1414 0.2422
[INFO] i: 7 mission_id: 1834 rul_hat: 19.98 flight_time: 18.77 distance: 1386.84 R0: 0.00680 Q: 15.14 Req: 0.24223
[INFO] mission number: 7, sample number: 18, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim

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[INFO] degradation parameters: 0.0044 13.6995 0.2420
[INFO] i: 7 mission_id: 1835 rul_hat: 19.98 flight_time: 17.84 distance: 1302.01 R0: 0.00436 Q: 13.70 Req: 0.24201
[INFO] mission number: 7, sample number: 19, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
[INFO] degradation parameters: 0.0009 13.0879 0.2381
[INFO] i: 7 mission_id: 1836 rul_hat: 19.98 flight_time: 17.84 distance: 1302.05 R0: 0.00092 Q: 13.09 Req: 0.23814
[INFO] mission number: 7, sample number: 20, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0072 15.5000 0.2422
[INFO] i: 7 mission_id: 1837 rul_hat: 19.98 flight_time: 19.63 distance: 1449.02 R0: 0.00715 Q: 15.50 Req: 0.24221
[INFO] mission number: 7, sample number: 21, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0051 14.6739 0.2408
[INFO] i: 7 mission_id: 1838 rul_hat: 19.98 flight_time: 19.63 distance: 1449.03 R0: 0.00512 Q: 14.67 Req: 0.24082
[INFO] mission number: 7, sample number: 22, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0026 14.2281 0.2392
[INFO] i: 7 mission_id: 1839 rul_hat: 19.98 flight_time: 19.63 distance: 1449.13 R0: 0.00255 Q: 14.23 Req: 0.23924
[INFO] mission number: 7, sample number: 23, trajectory id <2> with path_time: 19.92 that meets constraint: path_tim
[INFO] degradation parameters: 0.0076 14.2617 0.2419
[INFO] i: 7 mission_id: 1840 rul_hat: 19.98 flight_time: 19.93 distance: 1464.58 R0: 0.00761 Q: 14.26 Req: 0.24193
[INFO] mission number: 7, sample number: 24, trajectory id <2> with path_time: 19.92 that meets constraint: path_tim
[INFO] degradation parameters: 0.0016 15.5000 0.2463
[INFO] i: 7 mission_id: 1841 rul_hat: 19.98 flight_time: 19.93 distance: 1464.70 R0: 0.00164 Q: 15.50 Req: 0.24630
[INFO] mission number: 7, sample number: 25, trajectory id <2> with path_time: 19.92 that meets constraint: path_tim
[INFO] degradation parameters: 0.0030 13.9524 0.2442
[INFO] i: 7 mission_id: 1842 rul_hat: 19.98 flight_time: 19.93 distance: 1464.69 R0: 0.00295 Q: 13.95 Req: 0.24425
Elapsed time is 6372.765894 seconds.
[INFO] mission number: 8, sample number: 1, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0062 14.3580 0.2373
[INFO] i: 8 mission_id: 1843 rul_hat: 19.95 flight_time: 19.63 distance: 1449.11 R0: 0.00618 Q: 14.36 Req: 0.23734
[INFO] mission number: 8, sample number: 2, trajectory id <3> with path_time: 17.83 that meets constraint: path_time
[INFO] degradation parameters: 0.0033 15.5000 0.2422
[INFO] i: 8 mission_id: 1844 rul_hat: 19.95 flight_time: 17.84 distance: 1302.07 R0: 0.00334 Q: 15.50 Req: 0.24220
[INFO] mission number: 8, sample number: 3, trajectory id <20> with path_time: 19.65 that meets constraint: path_tin
[INFO] degradation parameters: 0.0001 14.3293 0.2429
[INFO] i: 8 mission_id: 1845 rul_hat: 19.95 flight_time: 19.63 distance: 1449.33 R0: 0.00010 Q: 14.33 Req: 0.24293
[INFO] mission number: 8, sample number: 4, trajectory id <2> with path_time: 19.92 that meets constraint: path_time
[INFO] degradation parameters: 0.0012 14.0212 0.2349
[INFO] i: 8 mission_id: 1846 rul_hat: 19.95 flight_time: 19.93 distance: 1464.69 R0: 0.00123 Q: 14.02 Req: 0.23487
[INFO] mission number: 8, sample number: 5, trajectory id <3> with path_time: 17.83 that meets constraint: path_time
[INFO] degradation parameters: 0.0058 14.4432 0.2364
[INFO] i: 8 mission_id: 1847 rul_hat: 19.95 flight_time: 17.84 distance: 1301.99 R0: 0.00578 Q: 14.44 Req: 0.23639
[INFO] mission number: 8, sample number: 6, trajectory id <20> with path_time: 19.65 that meets constraint: path_tin
[INFO] degradation parameters: 0.0030 15.5000 0.2477
[INFO] i: 8 mission_id: 1848 rul_hat: 19.95 flight_time: 19.63 distance: 1449.09 R0: 0.00301 Q: 15.50 Req: 0.24771
[INFO] mission number: 8, sample number: 7, trajectory id <20> with path_time: 19.65 that meets constraint: path_tin
[INFO] degradation parameters: 0.0055 15.5000 0.2525
[INFO] i: 8 mission_id: 1849 rul_hat: 19.95 flight_time: 19.63 distance: 1449.10 R0: 0.00549 Q: 15.50 Req: 0.25252
[INFO] mission number: 8, sample number: 8, trajectory id <20> with path_time: 19.65 that meets constraint: path_tin
[INFO] degradation parameters: 0.0051 11.0573 0.2372
[INFO] i: 8 mission_id: 1850 rul_hat: 19.95 flight_time: 19.63 distance: 1449.20 R0: 0.00514 Q: 11.06 Req: 0.23718
[INFO] mission number: 8, sample number: 9, trajectory id <2> with path_time: 19.92 that meets constraint: path_time
[INFO] degradation parameters: 0.0075 14.9679 0.2488
[INFO] i: 8 mission_id: 1851 rul_hat: 19.95 flight_time: 16.92 distance: 1191.12 R0: 0.00750 Q: 14.97 Req: 0.24878
[INFO] mission number: 8, sample number: 10, trajectory id <2> with path_time: 19.92 that meets constraint: path_tin
[INFO] degradation parameters: 0.0006 15.5000 0.2467
[INFO] i: 8 mission_id: 1852 rul_hat: 19.95 flight_time: 19.93 distance: 1464.62 R0: 0.00059 Q: 15.50 Req: 0.24670
[INFO] mission number: 8, sample number: 11, trajectory id <6> with path_time: 18.81 that meets constraint: path_tin
[INFO] degradation parameters: 0.0016 15.5000 0.2507
[INFO] i: 8 mission_id: 1853 rul_hat: 19.95 flight_time: 18.77 distance: 1386.85 R0: 0.00155 Q: 15.50 Req: 0.25073
[INFO] mission number: 8, sample number: 12, trajectory id <3> with path_time: 17.83 that meets constraint: path_tin
[INFO] degradation parameters: 0.0004 14.6433 0.2420
[INFO] i: 8 mission_id: 1854 rul_hat: 19.95 flight_time: 17.84 distance: 1302.09 R0: 0.00037 Q: 14.64 Req: 0.24197
[INFO] mission number: 8, sample number: 13, trajectory id <3> with path_time: 17.83 that meets constraint: path_tin
[INFO] degradation parameters: 0.0073 12.7067 0.2424
[INFO] i: 8 mission_id: 1855 rul_hat: 19.95 flight_time: 17.84 distance: 1302.02 R0: 0.00729 Q: 12.71 Req: 0.24236
[INFO] mission number: 8, sample number: 14, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0011 15.5000 0.2411
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[INFO] i: 8 mission_id: 1856 rul_hat: 19.95 flight_time: 17.84 distance: 1302.03 R0: 0.00109 Q: 15.50 Req: 0.24106
[INFO] mission number: 8, sample number: 15, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0027 15.5000 0.2393
[INFO] i: 8 mission_id: 1857 rul_hat: 19.95 flight_time: 18.77 distance: 1386.85 R0: 0.00268 Q: 15.50 Req: 0.23935
[INFO] mission number: 8, sample number: 16, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0046 15.5000 0.2445
[INFO] i: 8 mission_id: 1858 rul_hat: 19.95 flight_time: 17.84 distance: 1302.03 R0: 0.00455 Q: 15.50 Req: 0.24453
[INFO] mission number: 8, sample number: 17, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0086 14.6928 0.2502
[INFO] i: 8 mission_id: 1859 rul_hat: 19.95 flight_time: 19.63 distance: 1449.03 R0: 0.00862 Q: 14.69 Req: 0.25023
[INFO] mission number: 8, sample number: 18, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0031 15.5000 0.2436
[INFO] i: 8 mission_id: 1860 rul_hat: 19.95 flight_time: 18.77 distance: 1386.87 R0: 0.00307 Q: 15.50 Req: 0.24360
[INFO] mission number: 8, sample number: 19, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0093 13.9344 0.2339
[INFO] i: 8 mission_id: 1861 rul_hat: 19.95 flight_time: 18.77 distance: 1386.85 R0: 0.00929 Q: 13.93 Req: 0.23395
[INFO] mission number: 8, sample number: 20, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0023 14.0584 0.2511
[INFO] i: 8 mission_id: 1862 rul_hat: 19.95 flight_time: 18.77 distance: 1386.76 R0: 0.00229 Q: 14.06 Req: 0.25111
[INFO] mission number: 8, sample number: 21, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0022 15.5000 0.2403
[INFO] i: 8 mission_id: 1863 rul_hat: 19.95 flight_time: 18.77 distance: 1386.81 R0: 0.00225 Q: 15.50 Req: 0.24032
[INFO] mission number: 8, sample number: 22, trajectory id <2> with path_time: 19.92 that meets constraint: path_tim
[INFO] degradation parameters: 0.0016 15.5000 0.2351
[INFO] i: 8 mission_id: 1864 rul_hat: 19.95 flight_time: 19.93 distance: 1464.77 R0: 0.00157 Q: 15.50 Req: 0.23511
[INFO] mission number: 8, sample number: 23, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0045 14.4267 0.2387
[INFO] i: 8 mission_id: 1865 rul_hat: 19.95 flight_time: 18.77 distance: 1386.76 R0: 0.00447 Q: 14.43 Req: 0.23867
[INFO] mission number: 8, sample number: 24, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0024 15.2295 0.2446
[INFO] i: 8 mission_id: 1866 rul_hat: 19.95 flight_time: 17.84 distance: 1301.99 R0: 0.00240 Q: 15.23 Req: 0.24465
[INFO] mission number: 8, sample number: 25, trajectory id <2> with path_time: 19.92 that meets constraint: path_tim
[INFO] degradation parameters: 0.0044 13.8292 0.2458
[INFO] i: 8 mission_id: 1867 rul_hat: 19.95 flight_time: 19.93 distance: 1464.72 R0: 0.00442 Q: 13.83 Req: 0.24580
Elapsed time is 6234.536406 seconds.
[INFO] mission number: 9, sample number: 1, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0004 13.8029 0.2473
[INFO] i: 9 mission_id: 1868 rul_hat: 19.92 flight_time: 18.77 distance: 1386.81 R0: 0.00036 Q: 13.80 Req: 0.24731
[INFO] mission number: 9, sample number: 2, trajectory id <20> with path_time: 19.65 that meets constraint: path_tim
[INFO] degradation parameters: 0.0039 13.4608 0.2481
[INFO] i: 9 mission_id: 1869 rul_hat: 19.92 flight_time: 19.63 distance: 1449.02 R0: 0.00387 Q: 13.46 Req: 0.24807
[INFO] mission number: 9, sample number: 3, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0075 15.5000 0.2429
[INFO] i: 9 mission_id: 1870 rul_hat: 19.92 flight_time: 18.77 distance: 1386.89 R0: 0.00748 Q: 15.50 Req: 0.24287
[INFO] mission number: 9, sample number: 4, trajectory id <15> with path_time: 17.63 that meets constraint: path_tim
[INFO] degradation parameters: 0.0134 15.1965 0.2409
[INFO] i: 9 mission_id: 1871 rul_hat: 19.92 flight_time: 17.63 distance: 1283.70 R0: 0.01344 Q: 15.20 Req: 0.24087
[INFO] mission number: 9, sample number: 5, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0062 15.5000 0.2540
[INFO] i: 9 mission_id: 1872 rul_hat: 19.92 flight_time: 18.77 distance: 1386.85 R0: 0.00625 Q: 15.50 Req: 0.25397
[INFO] mission number: 9, sample number: 6, trajectory id <3> with path_time: 17.83 that meets constraint: path_time
[INFO] degradation parameters: 0.0022 15.5000 0.2568
[INFO] i: 9 mission_id: 1873 rul_hat: 19.92 flight_time: 17.84 distance: 1302.04 R0: 0.00216 Q: 15.50 Req: 0.25684
[INFO] mission number: 9, sample number: 7, trajectory id <20> with path_time: 19.65 that meets constraint: path_tim
[INFO] degradation parameters: 0.0018 15.5000 0.2388
[INFO] i: 9 mission_id: 1874 rul_hat: 19.92 flight_time: 19.63 distance: 1449.05 R0: 0.00183 Q: 15.50 Req: 0.23875
[INFO] mission number: 9, sample number: 8, trajectory id <6> with path_time: 18.81 that meets constraint: path_time
[INFO] degradation parameters: 0.0002 15.5000 0.2419
[INFO] i: 9 mission_id: 1875 rul_hat: 19.92 flight_time: 18.77 distance: 1386.78 R0: 0.00021 Q: 15.50 Req: 0.24192
[INFO] mission number: 9, sample number: 9, trajectory id <3> with path_time: 17.83 that meets constraint: path_time
[INFO] degradation parameters: 0.0001 14.3158 0.2487
[INFO] i: 9 mission_id: 1876 rul_hat: 19.92 flight_time: 17.84 distance: 1302.08 R0: 0.00010 Q: 14.32 Req: 0.24871
[INFO] mission number: 9, sample number: 10, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0071 14.2647 0.2524
[INFO] i: 9 mission_id: 1877 rul_hat: 19.92 flight_time: 19.63 distance: 1449.22 R0: 0.00708 Q: 14.26 Req: 0.25241
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[INFO] mission number: 9, sample number: 11, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0014 15.5000 0.2373
[INFO] i: 9 mission_id: 1878 rul_hat: 19.92 flight_time: 17.84 distance: 1302.08 R0: 0.00144 Q: 15.50 Req: 0.23727
[INFO] mission number: 9, sample number: 12, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0011 15.5000 0.2373
[INFO] i: 9 mission_id: 1879 rul_hat: 19.92 flight_time: 17.84 distance: 1302.05 R0: 0.00112 Q: 15.50 Req: 0.23725
[INFO] mission number: 9, sample number: 13, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0005 15.4383 0.2373
[INFO] i: 9 mission_id: 1880 rul_hat: 19.92 flight_time: 18.77 distance: 1386.80 R0: 0.00051 Q: 15.44 Req: 0.23733
[INFO] mission number: 9, sample number: 14, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0099 12.1467 0.2520
[INFO] i: 9 mission_id: 1881 rul_hat: 19.92 flight_time: 17.63 distance: 1283.75 R0: 0.00994 Q: 12.15 Req: 0.25197
[INFO] mission number: 9, sample number: 15, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0032 15.5000 0.2403
[INFO] i: 9 mission_id: 1882 rul_hat: 19.92 flight_time: 18.77 distance: 1386.60 R0: 0.00320 Q: 15.50 Req: 0.24032
[INFO] mission number: 9, sample number: 16, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0045 13.8641 0.2475
[INFO] i: 9 mission_id: 1883 rul_hat: 19.92 flight_time: 17.84 distance: 1302.06 R0: 0.00446 Q: 13.86 Req: 0.24746
[INFO] mission number: 9, sample number: 17, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0117 14.6767 0.2423
[INFO] i: 9 mission_id: 1884 rul_hat: 19.92 flight_time: 17.84 distance: 1302.09 R0: 0.01167 Q: 14.68 Req: 0.24228
[INFO] mission number: 9, sample number: 18, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0080 15.5000 0.2302
[INFO] i: 9 mission_id: 1885 rul_hat: 19.92 flight_time: 17.63 distance: 1283.80 R0: 0.00801 Q: 15.50 Req: 0.23016
[INFO] mission number: 9, sample number: 19, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0004 13.6386 0.2643
[INFO] i: 9 mission_id: 1886 rul_hat: 19.92 flight_time: 17.83 distance: 1301.85 R0: 0.00035 Q: 13.64 Req: 0.26427
[INFO] mission number: 9, sample number: 20, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0066 13.9051 0.2521
[INFO] i: 9 mission_id: 1887 rul_hat: 19.92 flight_time: 17.84 distance: 1302.09 R0: 0.00661 Q: 13.91 Req: 0.25208
[INFO] mission number: 9, sample number: 21, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0038 12.5978 0.2431
[INFO] i: 9 mission_id: 1888 rul_hat: 19.92 flight_time: 17.63 distance: 1283.69 R0: 0.00378 Q: 12.60 Req: 0.24313
[INFO] mission number: 9, sample number: 22, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0006 14.3883 0.2406
[INFO] i: 9 mission_id: 1889 rul_hat: 19.92 flight_time: 19.52 distance: 1441.40 R0: 0.00061 Q: 14.39 Req: 0.24059
[INFO] mission number: 9, sample number: 23, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0041 15.5000 0.2434
[INFO] i: 9 mission_id: 1890 rul_hat: 19.92 flight_time: 17.84 distance: 1301.99 R0: 0.00410 Q: 15.50 Req: 0.24343
[INFO] mission number: 9, sample number: 24, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0072 14.3800 0.2423
[INFO] i: 9 mission_id: 1891 rul_hat: 19.92 flight_time: 17.63 distance: 1283.75 R0: 0.00718 Q: 14.38 Req: 0.24230
[INFO] mission number: 9, sample number: 25, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0036 13.1246 0.2337
[INFO] i: 9 mission_id: 1892 rul_hat: 19.92 flight_time: 19.63 distance: 1449.16 R0: 0.00365 Q: 13.12 Req: 0.23367
Elapsed time is 6074.904955 seconds.
[INFO] mission number: 10, sample number: 1, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0107 13.6831 0.2441
[INFO] i: 10 mission_id: 1893 rul_hat: 19.75 flight_time: 17.83 distance: 1301.89 R0: 0.01075 Q: 13.68 Req: 0.24414
[INFO] mission number: 10, sample number: 2, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0068 14.5690 0.2513
[INFO] i: 10 mission_id: 1894 rul_hat: 19.75 flight_time: 18.77 distance: 1386.83 R0: 0.00681 Q: 14.57 Req: 0.25133
[INFO] mission number: 10, sample number: 3, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0036 15.3747 0.2560
[INFO] i: 10 mission_id: 1895 rul_hat: 19.75 flight_time: 18.77 distance: 1386.79 R0: 0.00362 Q: 15.37 Req: 0.25600
[INFO] mission number: 10, sample number: 4, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0027 15.5000 0.2438
[INFO] i: 10 mission_id: 1896 rul_hat: 19.75 flight_time: 17.63 distance: 1283.76 R0: 0.00268 Q: 15.50 Req: 0.24375
[INFO] mission number: 10, sample number: 5, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0013 15.5000 0.2478
[INFO] i: 10 mission_id: 1897 rul_hat: 19.75 flight_time: 18.77 distance: 1386.78 R0: 0.00132 Q: 15.50 Req: 0.24781
[INFO] mission number: 10, sample number: 6, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0027 14.4477 0.2387
[INFO] i: 10 mission_id: 1898 rul_hat: 19.75 flight_time: 18.77 distance: 1386.90 R0: 0.00269 Q: 14.45 Req: 0.23865
[INFO] mission number: 10, sample number: 7, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
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[INFO] degradation parameters: 0.0063 13.0216 0.2442
[INFO] i: 10 mission_id: 1899 rul_hat: 19.75 flight_time: 17.84 distance: 1302.02 R0: 0.00632 Q: 13.02 Req: 0.24422
[INFO] mission number: 10, sample number: 8, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0002 14.0134 0.2455
[INFO] i: 10 mission_id: 1900 rul_hat: 19.75 flight_time: 17.84 distance: 1302.06 R0: 0.00023 Q: 14.01 Req: 0.24548
[INFO] mission number: 10, sample number: 9, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0004 15.5000 0.2456
[INFO] i: 10 mission_id: 1901 rul_hat: 19.75 flight_time: 18.77 distance: 1386.84 R0: 0.00038 Q: 15.50 Req: 0.24556
[INFO] mission number: 10, sample number: 10, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0161 15.5000 0.2463
[INFO] i: 10 mission_id: 1902 rul_hat: 19.75 flight_time: 18.77 distance: 1386.79 R0: 0.01606 Q: 15.50 Req: 0.24633
[INFO] mission number: 10, sample number: 11, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0042 14.3629 0.2336
[INFO] i: 10 mission_id: 1903 rul_hat: 19.75 flight_time: 18.77 distance: 1386.85 R0: 0.00417 Q: 14.36 Req: 0.23360
[INFO] mission number: 10, sample number: 12, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
[INFO] degradation parameters: 0.0038 15.5000 0.2620
[INFO] i: 10 mission_id: 1904 rul_hat: 19.75 flight_time: 17.83 distance: 1301.88 R0: 0.00385 Q: 15.50 Req: 0.26200
[INFO] mission number: 10, sample number: 13, trajectory id <20> with path_time: 19.65 that meets constraint: path_t
[INFO] degradation parameters: 0.0104 15.5000 0.2451
[INFO] i: 10 mission_id: 1905 rul_hat: 19.75 flight_time: 19.63 distance: 1449.10 R0: 0.01040 Q: 15.50 Req: 0.24511
[INFO] mission number: 10, sample number: 14, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
[INFO] degradation parameters: 0.0086 13.6806 0.2458
[INFO] i: 10 mission_id: 1906 rul_hat: 19.75 flight_time: 17.63 distance: 1283.80 R0: 0.00860 Q: 13.68 Req: 0.24582
[INFO] mission number: 10, sample number: 15, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
[INFO] degradation parameters: 0.0055 14.7210 0.2612
[INFO] i: 10 mission_id: 1907 rul_hat: 19.75 flight_time: 17.63 distance: 1283.64 R0: 0.00553 Q: 14.72 Req: 0.26115
[INFO] mission number: 10, sample number: 16, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
[INFO] degradation parameters: 0.0110 14.0490 0.2515
[INFO] i: 10 mission_id: 1908 rul_hat: 19.75 flight_time: 17.84 distance: 1302.07 R0: 0.01104 Q: 14.05 Req: 0.25146
[INFO] mission number: 10, sample number: 17, trajectory id <20> with path_time: 19.65 that meets constraint: path_t
[INFO] degradation parameters: 0.0082 15.2971 0.2395
[INFO] i: 10 mission_id: 1909 rul_hat: 19.75 flight_time: 19.63 distance: 1449.05 R0: 0.00817 Q: 15.30 Req: 0.23953
[INFO] mission number: 10, sample number: 18, trajectory id <20> with path_time: 19.65 that meets constraint: path_t
[INFO] degradation parameters: 0.0160 14.5615 0.2344
[INFO] i: 10 mission_id: 1910 rul_hat: 19.75 flight_time: 19.63 distance: 1449.29 R0: 0.01604 Q: 14.56 Req: 0.23441
[INFO] mission number: 10, sample number: 19, trajectory id <20> with path_time: 19.65 that meets constraint: path_t
[INFO] degradation parameters: 0.0062 14.3092 0.2595
[INFO] i: 10 mission_id: 1911 rul_hat: 19.75 flight_time: 19.63 distance: 1449.17 R0: 0.00624 Q: 14.31 Req: 0.25946
[INFO] mission number: 10, sample number: 20, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
[INFO] degradation parameters: 0.0020 14.7255 0.2498
[INFO] i: 10 mission_id: 1912 rul_hat: 19.75 flight_time: 17.63 distance: 1283.77 R0: 0.00198 Q: 14.73 Req: 0.24981
[INFO] mission number: 10, sample number: 21, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0004 15.4051 0.2444
[INFO] i: 10 mission_id: 1913 rul_hat: 19.75 flight_time: 18.77 distance: 1386.84 R0: 0.00045 Q: 15.41 Req: 0.24444
[INFO] mission number: 10, sample number: 22, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0080 15.5000 0.2515
[INFO] i: 10 mission_id: 1914 rul_hat: 19.75 flight_time: 18.77 distance: 1386.83 R0: 0.00804 Q: 15.50 Req: 0.25147
[INFO] mission number: 10, sample number: 23, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
[INFO] degradation parameters: 0.0142 11.1304 0.2562
[INFO] i: 10 mission_id: 1915 rul_hat: 19.75 flight_time: 17.84 distance: 1302.08 R0: 0.01424 Q: 11.13 Req: 0.25624
[INFO] mission number: 10, sample number: 24, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
[INFO] degradation parameters: 0.0144 14.6437 0.2574
[INFO] i: 10 mission_id: 1916 rul_hat: 19.75 flight_time: 17.30 distance: 1258.13 R0: 0.01436 Q: 14.64 Req: 0.25737
[INFO] mission number: 10, sample number: 25, trajectory id <20> with path_time: 19.65 that meets constraint: path_t
[INFO] degradation parameters: 0.0081 14.8382 0.2652
[INFO] i: 10 mission_id: 1917 rul_hat: 19.75 flight_time: 19.63 distance: 1449.01 R0: 0.00812 Q: 14.84 Req: 0.26517
Elapsed time is 6075.811748 seconds.
[INFO] mission number: 11, sample number: 1, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0131 13.0432 0.2699
[INFO] i: 11 mission_id: 1918 rul_hat: 19.72 flight_time: 19.63 distance: 1448.93 R0: 0.01307 Q: 13.04 Req: 0.26991
[INFO] mission number: 11, sample number: 2, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0114 13.4743 0.2386
[INFO] i: 11 mission_id: 1919 rul_hat: 19.72 flight_time: 17.63 distance: 1283.93 R0: 0.01139 Q: 13.47 Req: 0.23857
[INFO] mission number: 11, sample number: 3, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0005 15.5000 0.2683
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[INFO] i: 11 mission_id: 1920 rul_hat: 19.72 flight_time: 17.63 distance: 1283.82 R0: 0.00049 Q: 15.50 Req: 0.26832
[INFO] mission number: 11, sample number: 4, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0014 15.5000 0.2586
[INFO] i: 11 mission_id: 1921 rul_hat: 19.72 flight_time: 19.63 distance: 1449.13 R0: 0.00140 Q: 15.50 Req: 0.25862
[INFO] mission number: 11, sample number: 5, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0004 15.2877 0.2495
[INFO] i: 11 mission_id: 1922 rul_hat: 19.72 flight_time: 18.77 distance: 1386.87 R0: 0.00040 Q: 15.29 Req: 0.24946
[INFO] mission number: 11, sample number: 6, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0152 15.1254 0.2360
[INFO] i: 11 mission_id: 1923 rul_hat: 19.72 flight_time: 18.77 distance: 1386.80 R0: 0.01521 Q: 15.13 Req: 0.23604
[INFO] mission number: 11, sample number: 7, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0006 13.5631 0.2543
[INFO] i: 11 mission_id: 1924 rul_hat: 19.72 flight_time: 19.63 distance: 1449.22 R0: 0.00061 Q: 13.56 Req: 0.25430
[INFO] mission number: 11, sample number: 8, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0121 13.3641 0.2633
[INFO] i: 11 mission_id: 1925 rul_hat: 19.72 flight_time: 17.63 distance: 1283.80 R0: 0.01213 Q: 13.36 Req: 0.26331
[INFO] mission number: 11, sample number: 9, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0106 13.4078 0.2545
[INFO] i: 11 mission_id: 1926 rul_hat: 19.72 flight_time: 18.77 distance: 1386.86 R0: 0.01057 Q: 13.41 Req: 0.25453
[INFO] mission number: 11, sample number: 10, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
[INFO] degradation parameters: 0.0146 13.2743 0.2738
[INFO] i: 11 mission_id: 1927 rul_hat: 19.72 flight_time: 17.63 distance: 1283.96 R0: 0.01456 Q: 13.27 Req: 0.27379
[INFO] mission number: 11, sample number: 11, trajectory id <20> with path_time: 19.65 that meets constraint: path_t
[INFO] degradation parameters: 0.0077 15.4793 0.2615
[INFO] i: 11 mission_id: 1928 rul_hat: 19.72 flight_time: 19.63 distance: 1449.00 R0: 0.00774 Q: 15.48 Req: 0.26150
[INFO] mission number: 11, sample number: 12, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0048 14.3539 0.2378
[INFO] i: 11 mission_id: 1929 rul_hat: 19.72 flight_time: 18.77 distance: 1386.87 R0: 0.00481 Q: 14.35 Req: 0.23785
[INFO] mission number: 11, sample number: 13, trajectory id <20> with path_time: 19.65 that meets constraint: path_t
[INFO] degradation parameters: 0.0195 13.1135 0.2503
[INFO] i: 11 mission_id: 1930 rul_hat: 19.72 flight_time: 19.63 distance: 1449.15 R0: 0.01947 Q: 13.11 Req: 0.25025
[INFO] mission number: 11, sample number: 14, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0016 15.2894 0.2493
[INFO] i: 11 mission_id: 1931 rul_hat: 19.72 flight_time: 18.77 distance: 1386.87 R0: 0.00155 Q: 15.29 Req: 0.24933
[INFO] mission number: 11, sample number: 15, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
[INFO] degradation parameters: 0.0018 14.7794 0.2737
[INFO] i: 11 mission_id: 1932 rul_hat: 19.72 flight_time: 17.63 distance: 1283.68 R0: 0.00176 Q: 14.78 Req: 0.27374
[INFO] mission number: 11, sample number: 16, trajectory id <20> with path_time: 19.65 that meets constraint: path_t
[INFO] degradation parameters: 0.0107 14.7051 0.2534
[INFO] i: 11 mission_id: 1933 rul_hat: 19.72 flight_time: 19.63 distance: 1448.75 R0: 0.01066 Q: 14.71 Req: 0.25340
[INFO] mission number: 11, sample number: 17, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
[INFO] degradation parameters: 0.0126 12.8729 0.2252
[INFO] i: 11 mission_id: 1934 rul_hat: 19.72 flight_time: 17.84 distance: 1302.07 R0: 0.01263 Q: 12.87 Req: 0.22520
[INFO] mission number: 11, sample number: 18, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
[INFO] degradation parameters: 0.0217 14.4242 0.2393
[INFO] i: 11 mission_id: 1935 rul_hat: 19.72 flight_time: 17.63 distance: 1283.73 R0: 0.02173 Q: 14.42 Req: 0.23934
[INFO] mission number: 11, sample number: 19, trajectory id <20> with path_time: 19.65 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0024 13.6260 0.2552
[INFO] i: 11 mission_id: 1936 rul_hat: 19.72 flight_time: 19.63 distance: 1449.31 R0: 0.00245 Q: 13.63 Req: 0.25523
[INFO] mission number: 11, sample number: 20, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
[INFO] degradation parameters: 0.0104 13.3066 0.2360
[INFO] i: 11 mission_id: 1937 rul_hat: 19.72 flight_time: 17.84 distance: 1301.99 R0: 0.01042 Q: 13.31 Req: 0.23597
[INFO] mission number: 11, sample number: 21, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0151 14.5351 0.2569
[INFO] i: 11 mission_id: 1938 rul_hat: 19.72 flight_time: 18.77 distance: 1386.87 R0: 0.01514 Q: 14.54 Req: 0.25695
[INFO] mission number: 11, sample number: 22, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
[INFO] degradation parameters: 0.0051 11.9039 0.2426
[INFO] i: 11 mission_id: 1939 rul_hat: 19.72 flight_time: 17.63 distance: 1283.85 R0: 0.00507 Q: 11.90 Req: 0.24263
[INFO] mission number: 11, sample number: 23, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0072 14.2350 0.2551
[INFO] i: 11 mission_id: 1940 rul_hat: 19.72 flight_time: 18.37 distance: 1340.03 R0: 0.00722 Q: 14.23 Req: 0.25506
[INFO] mission number: 11, sample number: 24, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0134 14.7818 0.2447
[INFO] i: 11 mission_id: 1941 rul_hat: 19.72 flight_time: 18.77 distance: 1386.86 R0: 0.01344 Q: 14.78 Req: 0.24473
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[INFO] mission number: 11, sample number: 25, trajectory id <20> with path_time: 19.65 that meets constraint: path_t
[INFO] degradation parameters: 0.0149 15.5000 0.2278
[INFO] i: 11 mission_id: 1942 rul_hat: 19.72 flight_time: 19.63 distance: 1449.00 R0: 0.01493 Q: 15.50 Req: 0.22778
Elapsed time is 6247.031057 seconds.
[INFO] mission number: 12, sample number: 1, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0142 14.6711 0.2427
[INFO] i: 12 mission_id: 1943 rul_hat: 19.69 flight_time: 19.63 distance: 1449.10 R0: 0.01419 Q: 14.67 Req: 0.24267
[INFO] mission number: 12, sample number: 2, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0148 12.8325 0.2659
[INFO] i: 12 mission_id: 1944 rul_hat: 19.69 flight_time: 17.63 distance: 1283.85 R0: 0.01475 Q: 12.83 Req: 0.26588
[INFO] mission number: 12, sample number: 3, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0122 14.3534 0.2589
[INFO] i: 12 mission_id: 1945 rul_hat: 19.69 flight_time: 17.63 distance: 1283.91 R0: 0.01220 Q: 14.35 Req: 0.25893
[INFO] mission number: 12, sample number: 4, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0178 14.7650 0.2525
[INFO] i: 12 mission_id: 1946 rul_hat: 19.69 flight_time: 18.77 distance: 1386.85 R0: 0.01776 Q: 14.76 Req: 0.25247
[INFO] mission number: 12, sample number: 5, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0191 13.7024 0.2676
[INFO] i: 12 mission_id: 1947 rul_hat: 19.69 flight_time: 17.84 distance: 1302.10 R0: 0.01908 Q: 13.70 Req: 0.26763
[INFO] mission number: 12, sample number: 6, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0083 11.8592 0.2847
[INFO] i: 12 mission_id: 1948 rul_hat: 19.69 flight_time: 19.63 distance: 1449.05 R0: 0.00834 Q: 11.86 Req: 0.28466
[INFO] mission number: 12, sample number: 7, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0093 14.6990 0.2478
[INFO] i: 12 mission_id: 1949 rul_hat: 19.69 flight_time: 17.84 distance: 1302.19 R0: 0.00934 Q: 14.70 Req: 0.24779
[INFO] mission number: 12, sample number: 8, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0137 15.5000 0.2568
[INFO] i: 12 mission_id: 1950 rul_hat: 19.69 flight_time: 19.63 distance: 1449.06 R0: 0.01371 Q: 15.50 Req: 0.25675
[INFO] mission number: 12, sample number: 9, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0135 15.5000 0.2571
[INFO] i: 12 mission_id: 1951 rul_hat: 19.69 flight_time: 17.63 distance: 1283.87 R0: 0.01345 Q: 15.50 Req: 0.25709
[INFO] mission number: 12, sample number: 10, trajectory id <20> with path_time: 19.65 that meets constraint: path_t
[INFO] degradation parameters: 0.0141 14.3471 0.2478
[INFO] i: 12 mission_id: 1952 rul_hat: 19.69 flight_time: 19.63 distance: 1449.06 R0: 0.01409 Q: 14.35 Req: 0.24778
[INFO] mission number: 12, sample number: 11, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
[INFO] degradation parameters: 0.0011 14.7041 0.2456
[INFO] i: 12 mission_id: 1953 rul_hat: 19.69 flight_time: 17.84 distance: 1302.09 R0: 0.00113 Q: 14.70 Req: 0.24560
[INFO] mission number: 12, sample number: 12, trajectory id <20> with path_time: 19.65 that meets constraint: path_t
[INFO] degradation parameters: 0.0140 15.5000 0.2723
[INFO] i: 12 mission_id: 1954 rul_hat: 19.69 flight_time: 19.63 distance: 1449.14 R0: 0.01399 Q: 15.50 Req: 0.27227
[INFO] mission number: 12, sample number: 13, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0002 15.5000 0.2405
[INFO] i: 12 mission_id: 1955 rul_hat: 19.69 flight_time: 18.77 distance: 1386.88 R0: 0.00016 Q: 15.50 Req: 0.24047
[INFO] mission number: 12, sample number: 14, trajectory id <20> with path_time: 19.65 that meets constraint: path_t
[INFO] degradation parameters: 0.0048 13.6489 0.2392
[INFO] i: 12 mission_id: 1956 rul_hat: 19.69 flight_time: 19.63 distance: 1449.19 R0: 0.00476 Q: 13.65 Req: 0.23922
[INFO] mission number: 12, sample number: 15, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0232 15.4662 0.2419
[INFO] i: 12 mission_id: 1957 rul_hat: 19.69 flight_time: 18.77 distance: 1386.81 R0: 0.02324 Q: 15.47 Req: 0.24190
[INFO] mission number: 12, sample number: 16, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0162 13.4982 0.2528
[INFO] i: 12 mission_id: 1958 rul_hat: 19.69 flight_time: 18.77 distance: 1386.74 R0: 0.01617 Q: 13.50 Req: 0.25281
[INFO] mission number: 12, sample number: 17, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
[INFO] degradation parameters: 0.0126 13.0272 0.2553
[INFO] i: 12 mission_id: 1959 rul_hat: 19.69 flight_time: 17.84 distance: 1302.07 R0: 0.01257 Q: 13.03 Req: 0.25526
[INFO] mission number: 12, sample number: 18, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
[INFO] degradation parameters: 0.0130 13.5967 0.2548
[INFO] i: 12 mission_id: 1960 rul_hat: 19.69 flight_time: 17.63 distance: 1283.68 R0: 0.01300 Q: 13.60 Req: 0.25477
[INFO] mission number: 12, sample number: 19, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
[INFO] degradation parameters: 0.0075 13.2310 0.2565
[INFO] i: 12 mission_id: 1961 rul_hat: 19.69 flight_time: 17.84 distance: 1302.04 R0: 0.00748 Q: 13.23 Req: 0.25646
[INFO] mission number: 12, sample number: 20, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0137 14.0262 0.2572
[INFO] i: 12 mission_id: 1962 rul_hat: 19.69 flight_time: 18.77 distance: 1386.82 R0: 0.01374 Q: 14.03 Req: 0.25721
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[INFO] mission number: 12, sample number: 21, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
[INFO] degradation parameters: 0.0106 13.1754 0.2525
[INFO] i: 12 mission_id: 1963 rul_hat: 19.69 flight_time: 17.84 distance: 1302.10 R0: 0.01063 Q: 13.18 Req: 0.25249
[INFO] mission number: 12, sample number: 22, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
[INFO] degradation parameters: 0.0207 14.5484 0.2674
[INFO] i: 12 mission_id: 1964 rul_hat: 19.69 flight_time: 17.63 distance: 1283.72 R0: 0.02073 Q: 14.55 Req: 0.26738
[INFO] mission number: 12, sample number: 23, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
[INFO] degradation parameters: 0.0074 13.1249 0.2430
[INFO] i: 12 mission_id: 1965 rul_hat: 19.69 flight_time: 17.63 distance: 1283.90 R0: 0.00741 Q: 13.12 Req: 0.24301
[INFO] mission number: 12, sample number: 24, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
[INFO] degradation parameters: 0.0076 13.4017 0.2602
[INFO] i: 12 mission_id: 1966 rul_hat: 19.69 flight_time: 17.84 distance: 1302.04 R0: 0.00757 Q: 13.40 Req: 0.26025
[INFO] mission number: 12, sample number: 25, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0017 14.2069 0.2477
[INFO] i: 12 mission_id: 1967 rul_hat: 19.69 flight_time: 18.77 distance: 1386.74 R0: 0.00172 Q: 14.21 Req: 0.24772
Elapsed time is 6109.655389 seconds.
[INFO] mission number: 13, sample number: 1, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0171 13.5252 0.2979
[INFO] i: 13 mission_id: 1968 rul_hat: 20.02 flight_time: 17.84 distance: 1302.08 R0: 0.01712 Q: 13.53 Req: 0.29788
[INFO] mission number: 13, sample number: 2, trajectory id <2> with path_time: 19.92 that meets constraint: path_tim
[INFO] degradation parameters: 0.0070 13.8364 0.2491
[INFO] i: 13 mission_id: 1969 rul_hat: 20.02 flight_time: 19.93 distance: 1465.07 R0: 0.00701 Q: 13.84 Req: 0.24911
[INFO] mission number: 13, sample number: 3, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0143 14.6009 0.2712
[INFO] i: 13 mission_id: 1970 rul_hat: 20.02 flight_time: 17.84 distance: 1302.06 R0: 0.01431 Q: 14.60 Req: 0.27116
[INFO] mission number: 13, sample number: 4, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0265 14.5443 0.2606
[INFO] i: 13 mission_id: 1971 rul_hat: 20.02 flight_time: 17.84 distance: 1302.13 R0: 0.02648 Q: 14.54 Req: 0.26065
[INFO] mission number: 13, sample number: 5, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0103 12.7768 0.2664
[INFO] i: 13 mission_id: 1972 rul_hat: 20.02 flight_time: 19.63 distance: 1449.04 R0: 0.01033 Q: 12.78 Req: 0.26639
[INFO] mission number: 13, sample number: 6, trajectory id <20> with path_time: 19.65 that meets constraint: path_ti
[INFO] degradation parameters: 0.0160 12.3680 0.2651
[INFO] i: 13 mission_id: 1973 rul_hat: 20.02 flight_time: 19.63 distance: 1449.09 R0: 0.01604 Q: 12.37 Req: 0.26510
[INFO] mission number: 13, sample number: 7, trajectory id <2> with path_time: 19.92 that meets constraint: path_tim
[INFO] degradation parameters: 0.0205 15.0577 0.2596
[INFO] i: 13 mission_id: 1974 rul_hat: 20.02 flight_time: 19.00 distance: 1367.15 R0: 0.02052 Q: 15.06 Req: 0.25959
[INFO] mission number: 13, sample number: 8, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0125 14.5168 0.2494
[INFO] i: 13 mission_id: 1975 rul_hat: 20.02 flight_time: 18.77 distance: 1386.90 R0: 0.01246 Q: 14.52 Req: 0.24944
[INFO] mission number: 13, sample number: 9, trajectory id <2> with path_time: 19.92 that meets constraint: path_tim
[INFO] degradation parameters: 0.0234 15.5000 0.2823
[INFO] i: 13 mission_id: 1976 rul_hat: 20.02 flight_time: 19.93 distance: 1464.82 R0: 0.02341 Q: 15.50 Req: 0.28227
[INFO] mission number: 13, sample number: 10, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0111 15.1572 0.2470
[INFO] i: 13 mission_id: 1977 rul_hat: 20.02 flight_time: 18.77 distance: 1386.86 R0: 0.01113 Q: 15.16 Req: 0.24695
[INFO] mission number: 13, sample number: 11, trajectory id <20> with path_time: 19.65 that meets constraint: path_t
[INFO] degradation parameters: 0.0231 12.3581 0.2826
[INFO] i: 13 mission_id: 1978 rul_hat: 20.02 flight_time: 19.63 distance: 1449.03 R0: 0.02310 Q: 12.36 Req: 0.28264
[INFO] mission number: 13, sample number: 12, trajectory id <20> with path_time: 19.65 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0139 14.6628 0.2468
[INFO] i: 13 mission_id: 1979 rul_hat: 20.02 flight_time: 18.65 distance: 1346.61 R0: 0.01390 Q: 14.66 Req: 0.24680
[INFO] mission number: 13, sample number: 13, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0200 15.5000 0.2647
[INFO] i: 13 mission_id: 1980 rul_hat: 20.02 flight_time: 18.77 distance: 1386.83 R0: 0.02005 Q: 15.50 Req: 0.26474
[INFO] mission number: 13, sample number: 14, trajectory id <2> with path_time: 19.92 that meets constraint: path_ti
[INFO] degradation parameters: 0.0079 13.9595 0.2561
[INFO] i: 13 mission_id: 1981 rul_hat: 20.02 flight_time: 19.93 distance: 1464.74 R0: 0.00792 Q: 13.96 Req: 0.25606
[INFO] mission number: 13, sample number: 15, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
[INFO] degradation parameters: 0.0075 12.9511 0.2458
[INFO] i: 13 mission_id: 1982 rul_hat: 20.02 flight_time: 17.84 distance: 1302.07 R0: 0.00751 Q: 12.95 Req: 0.24577
[INFO] mission number: 13, sample number: 16, trajectory id <2> with path_time: 19.92 that meets constraint: path_ti
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[INFO] degradation parameters: 0.0214 12.8026 0.2626
[INFO] i: 13 mission_id: 1983 rul_hat: 20.02 flight_time: 19.92 distance: 1464.06 R0: 0.02137 Q: 12.80 Req: 0.26257
[INFO] mission number: 13, sample number: 17, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0126 12.6260 0.2662
[INFO] i: 13 mission_id: 1984 rul_hat: 20.02 flight_time: 18.77 distance: 1386.88 R0: 0.01263 Q: 12.63 Req: 0.26618
[INFO] mission number: 13, sample number: 18, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0153 13.8536 0.2945
[INFO] i: 13 mission_id: 1985 rul_hat: 20.02 flight_time: 18.77 distance: 1386.80 R0: 0.01533 Q: 13.85 Req: 0.29453
[INFO] mission number: 13, sample number: 19, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0025 15.5000 0.2293
[INFO] i: 13 mission_id: 1986 rul_hat: 20.02 flight_time: 18.77 distance: 1386.87 R0: 0.00254 Q: 15.50 Req: 0.22928
[INFO] mission number: 13, sample number: 20, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0204 13.5021 0.2626
[INFO] i: 13 mission_id: 1987 rul_hat: 20.02 flight_time: 18.77 distance: 1386.89 R0: 0.02044 Q: 13.50 Req: 0.26259
[INFO] mission number: 13, sample number: 21, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0211 12.4878 0.2537
[INFO] i: 13 mission_id: 1988 rul_hat: 20.02 flight_time: 18.77 distance: 1386.88 R0: 0.02111 Q: 12.49 Req: 0.25373
[INFO] mission number: 13, sample number: 22, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0156 11.0362 0.2677
[INFO] i: 13 mission_id: 1989 rul_hat: 20.02 flight_time: 18.77 distance: 1386.85 R0: 0.01562 Q: 11.04 Req: 0.26773
[INFO] mission number: 13, sample number: 23, trajectory id <20> with path_time: 19.65 that meets constraint: path_t
[INFO] degradation parameters: 0.0263 15.0080 0.2792
[INFO] i: 13 mission_id: 1990 rul_hat: 20.02 flight_time: 17.18 distance: 1289.94 R0: 0.02629 Q: 15.01 Req: 0.27920
[INFO] mission number: 13, sample number: 24, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0182 14.6784 0.2637
[INFO] i: 13 mission_id: 1991 rul_hat: 20.02 flight_time: 17.84 distance: 1302.19 R0: 0.01820 Q: 14.68 Req: 0.26371
[INFO] mission number: 13, sample number: 25, trajectory id <2> with path_time: 19.92 that meets constraint: path_ti
[INFO] degradation parameters: 0.0131 12.7905 0.2659
[INFO] i: 13 mission_id: 1992 rul_hat: 20.02 flight_time: 19.93 distance: 1464.65 R0: 0.01313 Q: 12.79 Req: 0.26592
Elapsed time is 6165.226576 seconds.
[INFO] mission number: 14, sample number: 1, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0145 15.5000 0.2572
[INFO] i: 14 mission_id: 1993 rul_hat: 19.36 flight_time: 17.63 distance: 1283.85 R0: 0.01447 Q: 15.50 Req: 0.25718
[INFO] mission number: 14, sample number: 2, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
[INFO] degradation parameters: 0.0048 13.6915 0.2889
[INFO] i: 14 mission_id: 1994 rul_hat: 19.36 flight_time: 18.77 distance: 1386.84 R0: 0.00475 Q: 13.69 Req: 0.28894
[INFO] mission number: 14, sample number: 3, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0234 13.0687 0.2597
[INFO] i: 14 mission_id: 1995 rul_hat: 19.36 flight_time: 17.63 distance: 1284.07 R0: 0.02341 Q: 13.07 Req: 0.25966
[INFO] mission number: 14, sample number: 4, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0154 15.5000 0.2936
[INFO] i: 14 mission_id: 1996 rul_hat: 19.36 flight_time: 17.63 distance: 1283.74 R0: 0.01541 Q: 15.50 Req: 0.29361
[INFO] mission number: 14, sample number: 5, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0146 10.4119 0.2842
[INFO] i: 14 mission_id: 1997 rul_hat: 19.36 flight_time: 17.84 distance: 1302.33 R0: 0.01461 Q: 10.41 Req: 0.28418
[INFO] mission number: 14, sample number: 6, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0077 13.2269 0.2807
[INFO] i: 14 mission_id: 1998 rul_hat: 19.36 flight_time: 16.18 distance: 1171.10 R0: 0.00769 Q: 13.23 Req: 0.28070
[INFO] mission number: 14, sample number: 7, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0244 13.1746 0.2761
[INFO] i: 14 mission_id: 1999 rul_hat: 19.36 flight_time: 17.84 distance: 1302.20 R0: 0.02439 Q: 13.17 Req: 0.27614
[INFO] mission number: 14, sample number: 8, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
Bumping sigmax
[INFO] degradation parameters: 0.0141 14.8374 0.2663
[INFO] i: 14 mission_id: 2000 rul_hat: 19.36 flight_time: 18.77 distance: 1386.87 R0: 0.01412 Q: 14.84 Req: 0.26634
[INFO] mission number: 14, sample number: 9, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
[INFO] degradation parameters: 0.0222 11.7482 0.2857
[INFO] i: 14 mission_id: 2001 rul_hat: 19.36 flight_time: 17.63 distance: 1283.89 R0: 0.02224 Q: 11.75 Req: 0.28567
[INFO] mission number: 14, sample number: 10, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0185 15.0928 0.2800
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[INFO] i: 14 mission_id: 2002 rul_hat: 19.36 flight_time: 17.65 distance: 1263.98 R0: 0.01846 Q: 15.09 Req: 0.27997
[INFO] mission number: 14, sample number: 11, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
[INFO] degradation parameters: 0.0271 13.8021 0.2612
[INFO] i: 14 mission_id: 2003 rul_hat: 19.36 flight_time: 17.84 distance: 1302.16 R0: 0.02707 Q: 13.80 Req: 0.26117
[INFO] mission number: 14, sample number: 12, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0099 12.9637 0.2794
[INFO] i: 14 mission_id: 2004 rul_hat: 19.36 flight_time: 17.84 distance: 1302.05 R0: 0.00990 Q: 12.96 Req: 0.27944
[INFO] mission number: 14, sample number: 13, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
[INFO] degradation parameters: 0.0249 14.2919 0.2670
[INFO] i: 14 mission_id: 2005 rul_hat: 19.36 flight_time: 17.84 distance: 1302.19 R0: 0.02490 Q: 14.29 Req: 0.26696
[INFO] mission number: 14, sample number: 14, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0163 13.0014 0.2397
[INFO] i: 14 mission_id: 2006 rul_hat: 19.36 flight_time: 17.63 distance: 1283.83 R0: 0.01632 Q: 13.00 Req: 0.23974
[INFO] mission number: 14, sample number: 15, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
[INFO] degradation parameters: 0.0149 14.2969 0.2597
[INFO] i: 14 mission_id: 2007 rul_hat: 19.36 flight_time: 17.84 distance: 1302.10 R0: 0.01494 Q: 14.30 Req: 0.25967
[INFO] mission number: 14, sample number: 16, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
[INFO] degradation parameters: 0.0248 11.7945 0.2418
[INFO] i: 14 mission_id: 2008 rul_hat: 19.36 flight_time: 16.36 distance: 1218.86 R0: 0.02479 Q: 11.79 Req: 0.24178
[INFO] mission number: 14, sample number: 17, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0220 15.4842 0.2767
[INFO] i: 14 mission_id: 2009 rul_hat: 19.36 flight_time: 17.84 distance: 1302.02 R0: 0.02201 Q: 15.48 Req: 0.27674
[INFO] mission number: 14, sample number: 18, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0365 14.4579 0.2550
[INFO] i: 14 mission_id: 2010 rul_hat: 19.36 flight_time: 18.77 distance: 1386.88 R0: 0.03650 Q: 14.46 Req: 0.25496
[INFO] mission number: 14, sample number: 19, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0290 12.0682 0.2554
[INFO] i: 14 mission_id: 2011 rul_hat: 19.36 flight_time: 17.63 distance: 1283.82 R0: 0.02904 Q: 12.07 Req: 0.25536
[INFO] mission number: 14, sample number: 20, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0201 13.4925 0.2638
[INFO] i: 14 mission_id: 2012 rul_hat: 19.36 flight_time: 17.63 distance: 1283.74 R0: 0.02012 Q: 13.49 Req: 0.26382
[INFO] mission number: 14, sample number: 21, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
[INFO] degradation parameters: 0.0265 11.1000 0.2692
[INFO] i: 14 mission_id: 2013 rul_hat: 19.36 flight_time: 16.36 distance: 1218.91 R0: 0.02651 Q: 11.10 Req: 0.26920
[INFO] mission number: 14, sample number: 22, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0233 14.1733 0.2431
[INFO] i: 14 mission_id: 2014 rul_hat: 19.36 flight_time: 16.36 distance: 1218.88 R0: 0.02328 Q: 14.17 Req: 0.24306
[INFO] mission number: 14, sample number: 23, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0295 14.3876 0.2876
[INFO] i: 14 mission_id: 2015 rul_hat: 19.36 flight_time: 17.84 distance: 1302.03 R0: 0.02952 Q: 14.39 Req: 0.28764
[INFO] mission number: 14, sample number: 24, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0248 11.9364 0.2631
[INFO] i: 14 mission_id: 2016 rul_hat: 19.36 flight_time: 16.36 distance: 1218.93 R0: 0.02475 Q: 11.94 Req: 0.26309
[INFO] mission number: 14, sample number: 25, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0376 12.5687 0.2752
[INFO] i: 14 mission_id: 2017 rul_hat: 19.36 flight_time: 17.97 distance: 1301.77 R0: 0.03758 Q: 12.57 Req: 0.27524
Elapsed time is 5771.565661 seconds.
[INFO] mission number: 15, sample number: 1, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
Bumping sigmax
[INFO] degradation parameters: 0.0218 13.3519 0.2516
[INFO] i: 15 mission_id: 2018 rul_hat: 19.03 flight_time: 18.77 distance: 1386.87 R0: 0.02177 Q: 13.35 Req: 0.25163
[INFO] mission number: 15, sample number: 2, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0400 14.5052 0.2881
[INFO] i: 15 mission_id: 2019 rul_hat: 19.03 flight_time: 16.36 distance: 1218.79 R0: 0.04005 Q: 14.51 Req: 0.28812
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[INFO] mission number: 15, sample number: 3, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0123 12.1227 0.2563
[INFO] i: 15 mission_id: 2020 rul_hat: 19.03 flight_time: 17.63 distance: 1284.09 R0: 0.01234 Q: 12.12 Req: 0.25630
[INFO] mission number: 15, sample number: 4, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0316 14.0696 0.2879
[INFO] i: 15 mission_id: 2021 rul_hat: 19.03 flight_time: 17.84 distance: 1302.10 R0: 0.03163 Q: 14.07 Req: 0.28791
[INFO] mission number: 15, sample number: 5, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
Bumping sigmax
[INFO] degradation parameters: 0.0355 13.9529 0.2596
[INFO] i: 15 mission_id: 2022 rul_hat: 19.03 flight_time: 18.77 distance: 1386.86 R0: 0.03552 Q: 13.95 Req: 0.25956
[INFO] mission number: 15, sample number: 6, trajectory id <6> with path_time: 18.81 that meets constraint: path_tim
Bumping sigmax
[INFO] degradation parameters: 0.0182 13.1424 0.2656
[INFO] i: 15 mission_id: 2023 rul_hat: 19.03 flight_time: 18.77 distance: 1386.89 R0: 0.01823 Q: 13.14 Req: 0.26558
[INFO] mission number: 15, sample number: 7, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0259 15.5000 0.2631
[INFO] i: 15 mission_id: 2024 rul_hat: 19.03 flight_time: 17.84 distance: 1302.11 R0: 0.02591 Q: 15.50 Req: 0.26313
[INFO] mission number: 15, sample number: 8, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0151 14.0553 0.2888
[INFO] i: 15 mission_id: 2025 rul_hat: 19.03 flight_time: 16.36 distance: 1218.85 R0: 0.01507 Q: 14.06 Req: 0.28880
[INFO] mission number: 15, sample number: 9, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
[INFO] degradation parameters: 0.0340 12.9043 0.3090
[INFO] i: 15 mission_id: 2026 rul_hat: 19.03 flight_time: 16.36 distance: 1218.88 R0: 0.03403 Q: 12.90 Req: 0.30898
[INFO] mission number: 15, sample number: 10, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0263 12.5468 0.2886
[INFO] i: 15 mission_id: 2027 rul_hat: 19.03 flight_time: 17.63 distance: 1283.98 R0: 0.02627 Q: 12.55 Req: 0.28864
[INFO] mission number: 15, sample number: 11, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0304 12.1712 0.2842
[INFO] i: 15 mission_id: 2028 rul_hat: 19.03 flight_time: 16.36 distance: 1218.74 R0: 0.03044 Q: 12.17 Req: 0.28420
[INFO] mission number: 15, sample number: 12, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0189 12.3645 0.2935
[INFO] i: 15 mission_id: 2029 rul_hat: 19.03 flight_time: 18.28 distance: 1332.53 R0: 0.01893 Q: 12.36 Req: 0.29349
[INFO] mission number: 15, sample number: 13, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
[INFO] degradation parameters: 0.0281 14.2175 0.2716
[INFO] i: 15 mission_id: 2030 rul_hat: 19.03 flight_time: 17.63 distance: 1284.03 R0: 0.02809 Q: 14.22 Req: 0.27164
[INFO] mission number: 15, sample number: 14, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0272 13.2428 0.2724
[INFO] i: 15 mission_id: 2031 rul_hat: 19.03 flight_time: 18.77 distance: 1386.87 R0: 0.02722 Q: 13.24 Req: 0.27244
[INFO] mission number: 15, sample number: 15, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0202 12.7323 0.2819
[INFO] i: 15 mission_id: 2032 rul_hat: 19.03 flight_time: 18.77 distance: 1386.88 R0: 0.02024 Q: 12.73 Req: 0.28186
[INFO] mission number: 15, sample number: 16, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
[INFO] degradation parameters: 0.0226 11.7577 0.2520
[INFO] i: 15 mission_id: 2033 rul_hat: 19.03 flight_time: 16.36 distance: 1218.81 R0: 0.02256 Q: 11.76 Req: 0.25202
[INFO] mission number: 15, sample number: 17, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0305 13.2815 0.2799
[INFO] i: 15 mission_id: 2034 rul_hat: 19.03 flight_time: 17.70 distance: 1269.72 R0: 0.03054 Q: 13.28 Req: 0.27994
[INFO] mission number: 15, sample number: 18, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0210 14.9897 0.2832
[INFO] i: 15 mission_id: 2035 rul_hat: 19.03 flight_time: 17.84 distance: 1302.21 R0: 0.02100 Q: 14.99 Req: 0.28324
[INFO] mission number: 15, sample number: 19, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
[INFO] degradation parameters: 0.0238 15.5000 0.2651
[INFO] i: 15 mission_id: 2036 rul_hat: 19.03 flight_time: 16.36 distance: 1218.91 R0: 0.02382 Q: 15.50 Req: 0.26510
[INFO] mission number: 15, sample number: 20, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0302 15.3525 0.2947
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[INFO] i: 15 mission_id: 2037 rul_hat: 19.03 flight_time: 17.84 distance: 1302.10 R0: 0.03025 Q: 15.35 Req: 0.29469
[INFO] mission number: 15, sample number: 21, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0206 14.2361 0.2711
[INFO] i: 15 mission_id: 2038 rul_hat: 19.03 flight_time: 16.36 distance: 1219.02 R0: 0.02056 Q: 14.24 Req: 0.27115
[INFO] mission number: 15, sample number: 22, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
[INFO] degradation parameters: 0.0164 12.0951 0.2919
[INFO] i: 15 mission_id: 2039 rul_hat: 19.03 flight_time: 17.63 distance: 1283.92 R0: 0.01640 Q: 12.10 Req: 0.29193
[INFO] mission number: 15, sample number: 23, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
[INFO] degradation parameters: 0.0218 14.0922 0.3071
[INFO] i: 15 mission_id: 2040 rul_hat: 19.03 flight_time: 18.67 distance: 1377.92 R0: 0.02180 Q: 14.09 Req: 0.30714
[INFO] mission number: 15, sample number: 24, trajectory id <6> with path_time: 18.81 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0276 14.5239 0.2791
[INFO] i: 15 mission_id: 2041 rul_hat: 19.03 flight_time: 18.77 distance: 1386.91 R0: 0.02758 Q: 14.52 Req: 0.27907
[INFO] mission number: 15, sample number: 25, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0307 10.6714 0.2686
[INFO] i: 15 mission_id: 2042 rul_hat: 19.03 flight_time: 17.84 distance: 1302.20 R0: 0.03070 Q: 10.67 Req: 0.26857
Elapsed time is 5716.582803 seconds.
[INFO] mission number: 16, sample number: 1, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0432 13.9909 0.2769
[INFO] i: 16 mission_id: 2043 rul_hat: 18.70 flight_time: 16.15 distance: 1145.27 R0: 0.04316 Q: 13.99 Req: 0.27688
[INFO] mission number: 16, sample number: 2, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
Bumping sigmax
[INFO] degradation parameters: 0.0402 14.0481 0.2853
[INFO] i: 16 mission_id: 2044 rul_hat: 18.70 flight_time: 17.84 distance: 1302.20 R0: 0.04020 Q: 14.05 Req: 0.28529
[INFO] mission number: 16, sample number: 3, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0261 10.3599 0.2967
[INFO] i: 16 mission_id: 2045 rul_hat: 18.70 flight_time: 16.36 distance: 1218.84 R0: 0.02606 Q: 10.36 Req: 0.29666
[INFO] mission number: 16, sample number: 4, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0342 14.6587 0.2887
[INFO] i: 16 mission_id: 2046 rul_hat: 18.70 flight_time: 15.87 distance: 1184.43 R0: 0.03420 Q: 14.66 Req: 0.28865
[INFO] mission number: 16, sample number: 5, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0271 12.6396 0.2569
[INFO] i: 16 mission_id: 2047 rul_hat: 18.70 flight_time: 16.02 distance: 1182.31 R0: 0.02714 Q: 12.64 Req: 0.25686
[INFO] mission number: 16, sample number: 6, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0232 11.2379 0.3067
[INFO] i: 16 mission_id: 2048 rul_hat: 18.70 flight_time: 16.36 distance: 1218.87 R0: 0.02316 Q: 11.24 Req: 0.30669
[INFO] mission number: 16, sample number: 7, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
[INFO] degradation parameters: 0.0417 14.6992 0.3099
[INFO] i: 16 mission_id: 2049 rul_hat: 18.70 flight_time: 16.02 distance: 1182.23 R0: 0.04168 Q: 14.70 Req: 0.30987
[INFO] mission number: 16, sample number: 8, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0219 13.7223 0.2982
[INFO] i: 16 mission_id: 2050 rul_hat: 18.70 flight_time: 17.63 distance: 1284.08 R0: 0.02186 Q: 13.72 Req: 0.29819
[INFO] mission number: 16, sample number: 9, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
[INFO] degradation parameters: 0.0292 12.1569 0.3043
[INFO] i: 16 mission_id: 2051 rul_hat: 18.70 flight_time: 17.84 distance: 1302.35 R0: 0.02919 Q: 12.16 Req: 0.30432
[INFO] mission number: 16, sample number: 10, trajectory id <28> with path_time: 16.01 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0330 10.4471 0.2808
[INFO] i: 16 mission_id: 2052 rul_hat: 18.70 flight_time: 16.02 distance: 1182.27 R0: 0.03304 Q: 10.45 Req: 0.28084
[INFO] mission number: 16, sample number: 11, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0377 10.7145 0.2953
[INFO] i: 16 mission_id: 2053 rul_hat: 18.70 flight_time: 15.80 distance: 1126.94 R0: 0.03773 Q: 10.71 Req: 0.29530
[INFO] mission number: 16, sample number: 12, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0308 14.4996 0.2837
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[INFO] i: 16 mission_id: 2054 rul_hat: 18.70 flight_time: 16.35 distance: 1161.54 R0: 0.03083 Q: 14.50 Req: 0.28368
[INFO] mission number: 16, sample number: 13, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0351 12.1008 0.3075
[INFO] i: 16 mission_id: 2055 rul_hat: 18.70 flight_time: 17.63 distance: 1283.93 R0: 0.03514 Q: 12.10 Req: 0.30750
[INFO] mission number: 16, sample number: 14, trajectory id <28> with path_time: 16.01 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0347 12.7424 0.2698
[INFO] i: 16 mission_id: 2056 rul_hat: 18.70 flight_time: 16.02 distance: 1182.19 R0: 0.03468 Q: 12.74 Req: 0.26984
[INFO] mission number: 16, sample number: 15, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0276 15.1772 0.2851
[INFO] i: 16 mission_id: 2057 rul_hat: 18.70 flight_time: 17.84 distance: 1302.17 R0: 0.02756 Q: 15.18 Req: 0.28506
[INFO] mission number: 16, sample number: 16, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0300 13.7876 0.2798
[INFO] i: 16 mission_id: 2058 rul_hat: 18.70 flight_time: 17.63 distance: 1283.89 R0: 0.03000 Q: 13.79 Req: 0.27978
[INFO] mission number: 16, sample number: 17, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0448 13.6012 0.2842
[INFO] i: 16 mission_id: 2059 rul_hat: 18.70 flight_time: 16.36 distance: 1218.83 R0: 0.04481 Q: 13.60 Req: 0.28422
[INFO] mission number: 16, sample number: 18, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0276 11.8014 0.2964
[INFO] i: 16 mission_id: 2060 rul_hat: 18.70 flight_time: 16.36 distance: 1218.78 R0: 0.02764 Q: 11.80 Req: 0.29636
[INFO] mission number: 16, sample number: 19, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0350 14.9192 0.3028
[INFO] i: 16 mission_id: 2061 rul_hat: 18.70 flight_time: 16.37 distance: 1218.90 R0: 0.03504 Q: 14.92 Req: 0.30278
[INFO] mission number: 16, sample number: 20, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0360 9.6981 0.3017
[INFO] i: 16 mission_id: 2062 rul_hat: 18.70 flight_time: 17.84 distance: 1302.35 R0: 0.03599 Q: 9.70 Req: 0.30169
[INFO] mission number: 16, sample number: 21, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0359 12.7129 0.2745
[INFO] i: 16 mission_id: 2063 rul_hat: 18.70 flight_time: 14.93 distance: 1117.83 R0: 0.03587 Q: 12.71 Req: 0.27448
[INFO] mission number: 16, sample number: 22, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0377 12.0840 0.2772
[INFO] i: 16 mission_id: 2064 rul_hat: 18.70 flight_time: 17.63 distance: 1284.00 R0: 0.03768 Q: 12.08 Req: 0.27721
[INFO] mission number: 16, sample number: 23, trajectory id <28> with path_time: 16.01 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0436 13.2484 0.2996
[INFO] i: 16 mission_id: 2065 rul_hat: 18.70 flight_time: 16.02 distance: 1182.44 R0: 0.04361 Q: 13.25 Req: 0.29960
[INFO] mission number: 16, sample number: 24, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0195 12.8783 0.2785
[INFO] i: 16 mission_id: 2066 rul_hat: 18.70 flight_time: 16.37 distance: 1219.03 R0: 0.01946 Q: 12.88 Req: 0.27852
[INFO] mission number: 16, sample number: 25, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
[INFO] degradation parameters: 0.0236 11.5206 0.2964
[INFO] i: 16 mission_id: 2067 rul_hat: 18.70 flight_time: 17.63 distance: 1283.94 R0: 0.02356 Q: 11.52 Req: 0.29644
Elapsed time is 5460.757813 seconds.
[INFO] mission number: 17, sample number: 1, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
Bumping sigmax
[INFO] degradation parameters: 0.0386 12.8523 0.2841
[INFO] i: 17 mission_id: 2068 rul_hat: 18.04 flight_time: 17.37 distance: 1263.58 R0: 0.03856 Q: 12.85 Req: 0.28406
[INFO] mission number: 17, sample number: 2, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0341 9.8762 0.3093
[INFO] i: 17 mission_id: 2069 rul_hat: 18.04 flight_time: 16.36 distance: 1218.97 R0: 0.03408 Q: 9.88 Req: 0.30928
[INFO] mission number: 17, sample number: 3, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0314 14.2563 0.2815
[INFO] i: 17 mission_id: 2070 rul_hat: 18.04 flight_time: 14.62 distance: 1035.45 R0: 0.03144 Q: 14.26 Req: 0.28152
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[INFO] mission number: 17, sample number: 4, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0345 12.0297 0.3203
[INFO] i: 17 mission_id: 2071 rul_hat: 18.04 flight_time: 16.02 distance: 1182.34 R0: 0.03455 Q: 12.03 Req: 0.32027
[INFO] mission number: 17, sample number: 5, trajectory id <3> with path_time: 17.83 that meets constraint: path_tim
Bumping sigmax
[INFO] degradation parameters: 0.0452 13.1181 0.2923
[INFO] i: 17 mission_id: 2072 rul_hat: 18.04 flight_time: 17.84 distance: 1302.30 R0: 0.04518 Q: 13.12 Req: 0.29233
[INFO] mission number: 17, sample number: 6, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0391 12.4317 0.3255
[INFO] i: 17 mission_id: 2073 rul_hat: 18.04 flight_time: 16.36 distance: 1219.02 R0: 0.03907 Q: 12.43 Req: 0.32553
[INFO] mission number: 17, sample number: 7, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0507 11.7410 0.2904
[INFO] i: 17 mission_id: 2074 rul_hat: 18.04 flight_time: 16.37 distance: 1219.15 R0: 0.05065 Q: 11.74 Req: 0.29038
[INFO] mission number: 17, sample number: 8, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0537 12.6303 0.3215
[INFO] i: 17 mission_id: 2075 rul_hat: 18.04 flight_time: 16.36 distance: 1218.91 R0: 0.05370 Q: 12.63 Req: 0.32154
[INFO] mission number: 17, sample number: 9, trajectory id <15> with path_time: 17.63 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0250 13.7047 0.2833
[INFO] i: 17 mission_id: 2076 rul_hat: 18.04 flight_time: 17.63 distance: 1284.02 R0: 0.02497 Q: 13.70 Req: 0.28327
[INFO] mission number: 17, sample number: 10, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0307 14.5020 0.3250
[INFO] i: 17 mission_id: 2077 rul_hat: 18.04 flight_time: 17.84 distance: 1302.20 R0: 0.03070 Q: 14.50 Req: 0.32504
[INFO] mission number: 17, sample number: 11, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0422 9.7461 0.2779
[INFO] i: 17 mission_id: 2078 rul_hat: 18.04 flight_time: 17.64 distance: 1284.20 R0: 0.04225 Q: 9.75 Req: 0.27792
[INFO] mission number: 17, sample number: 12, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0475 8.0119 0.2945
[INFO] i: 17 mission_id: 2079 rul_hat: 18.04 flight_time: 14.93 distance: 1117.84 R0: 0.04748 Q: 8.01 Req: 0.29451
[INFO] mission number: 17, sample number: 13, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0379 10.3179 0.3239
[INFO] i: 17 mission_id: 2080 rul_hat: 18.04 flight_time: 11.87 distance: 841.87 R0: 0.03790 Q: 10.32 Req: 0.32387
[INFO] mission number: 17, sample number: 14, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0387 10.4204 0.2910
[INFO] i: 17 mission_id: 2081 rul_hat: 18.04 flight_time: 15.92 distance: 1137.65 R0: 0.03866 Q: 10.42 Req: 0.29097
[INFO] mission number: 17, sample number: 15, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0391 15.5000 0.3129
[INFO] i: 17 mission_id: 2082 rul_hat: 18.04 flight_time: 16.00 distance: 1191.20 R0: 0.03909 Q: 15.50 Req: 0.31291
[INFO] mission number: 17, sample number: 16, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0434 11.8808 0.2868
[INFO] i: 17 mission_id: 2083 rul_hat: 18.04 flight_time: 16.37 distance: 1219.05 R0: 0.04338 Q: 11.88 Req: 0.28677
[INFO] mission number: 17, sample number: 17, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0324 10.8500 0.3123
[INFO] i: 17 mission_id: 2084 rul_hat: 18.04 flight_time: 16.36 distance: 1218.92 R0: 0.03242 Q: 10.85 Req: 0.31225
[INFO] mission number: 17, sample number: 18, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0349 12.2264 0.3144
[INFO] i: 17 mission_id: 2085 rul_hat: 18.04 flight_time: 16.35 distance: 1182.92 R0: 0.03489 Q: 12.23 Req: 0.31441
[INFO] mission number: 17, sample number: 19, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0452 10.3309 0.3186
[INFO] i: 17 mission_id: 2086 rul_hat: 18.04 flight_time: 17.84 distance: 1302.32 R0: 0.04519 Q: 10.33 Req: 0.31857
[INFO] mission number: 17, sample number: 20, trajectory id <3> with path_time: 17.83 that meets constraint: path_ti
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Bumping sigmax
[INFO] degradation parameters: 0.0406 10.1605 0.2865
[INFO] i: 17 mission_id: 2087 rul_hat: 18.04 flight_time: 15.38 distance: 1074.01 R0: 0.04060 Q: 10.16 Req: 0.28648
[INFO] mission number: 17, sample number: 21, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0291 13.4556 0.2929
[INFO] i: 17 mission_id: 2088 rul_hat: 18.04 flight_time: 15.53 distance: 1135.35 R0: 0.02909 Q: 13.46 Req: 0.29288
[INFO] mission number: 17, sample number: 22, trajectory id <15> with path_time: 17.63 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0495 10.4906 0.2956
[INFO] i: 17 mission_id: 2089 rul_hat: 18.04 flight_time: 17.63 distance: 1283.89 R0: 0.04951 Q: 10.49 Req: 0.29557
[INFO] mission number: 17, sample number: 23, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0427 10.6913 0.3037
[INFO] i: 17 mission_id: 2090 rul_hat: 18.04 flight_time: 16.18 distance: 1205.96 R0: 0.04268 Q: 10.69 Req: 0.30368
[INFO] mission number: 17, sample number: 24, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0412 13.1150 0.2869
[INFO] i: 17 mission_id: 2091 rul_hat: 18.04 flight_time: 16.37 distance: 1219.07 R0: 0.04119 Q: 13.11 Req: 0.28691
[INFO] mission number: 17, sample number: 25, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0418 10.8909 0.2949
[INFO] i: 17 mission_id: 2092 rul_hat: 18.04 flight_time: 16.36 distance: 1218.85 R0: 0.04175 Q: 10.89 Req: 0.29486
Elapsed time is 5283.167106 seconds.
[INFO] mission number: 18, sample number: 1, trajectory id <27> with path_time: 15.72 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0494 10.3131 0.3291
[INFO] i: 18 mission_id: 2093 rul_hat: 17.38 flight_time: 15.60 distance: 1147.95 R0: 0.04939 Q: 10.31 Req: 0.32910
[INFO] mission number: 18, sample number: 2, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0660 10.9990 0.3393
[INFO] i: 18 mission_id: 2094 rul_hat: 17.38 flight_time: 15.03 distance: 1088.87 R0: 0.06599 Q: 11.00 Req: 0.33932
[INFO] mission number: 18, sample number: 3, trajectory id <22> with path_time: 16.00 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0388 6.4694 0.2945
[INFO] i: 18 mission_id: 2095 rul_hat: 17.38 flight_time: 0.57 distance: 66.38 R0: 0.03880 Q: 6.47 Req: 0.29450
[INFO] mission number: 18, sample number: 4, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0325 11.1377 0.3265
[INFO] i: 18 mission_id: 2096 rul_hat: 17.38 flight_time: 9.67 distance: 659.13 R0: 0.03247 Q: 11.14 Req: 0.32654
[INFO] mission number: 18, sample number: 5, trajectory id <22> with path_time: 16.00 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0592 14.1873 0.3021
[INFO] i: 18 mission_id: 2097 rul_hat: 17.38 flight_time: 15.99 distance: 1181.22 R0: 0.05923 Q: 14.19 Req: 0.30213
[INFO] mission number: 18, sample number: 6, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0364 6.9597 0.3020
[INFO] i: 18 mission_id: 2098 rul_hat: 17.38 flight_time: 16.37 distance: 1219.00 R0: 0.03642 Q: 6.96 Req: 0.30198
[INFO] mission number: 18, sample number: 7, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0579 10.3006 0.3265
[INFO] i: 18 mission_id: 2099 rul_hat: 17.38 flight_time: 10.35 distance: 750.82 R0: 0.05789 Q: 10.30 Req: 0.32647
[INFO] mission number: 18, sample number: 8, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0506 9.4771 0.3211
[INFO] i: 18 mission_id: 2100 rul_hat: 17.38 flight_time: 16.23 distance: 1210.52 R0: 0.05058 Q: 9.48 Req: 0.32110
[INFO] mission number: 18, sample number: 9, trajectory id <27> with path_time: 15.72 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0615 13.2424 0.3453
[INFO] i: 18 mission_id: 2101 rul_hat: 17.38 flight_time: 13.92 distance: 986.08 R0: 0.06148 Q: 13.24 Req: 0.34534
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[INFO] mission number: 18, sample number: 10, trajectory id <27> with path_time: 15.72 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0453 10.2512 0.3137
[INFO] i: 18 mission_id: 2102 rul_hat: 17.38 flight_time: 6.81 distance: 501.87 R0: 0.04530 Q: 10.25 Req: 0.31371
[INFO] mission number: 18, sample number: 11, trajectory id <27> with path_time: 15.72 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0416 9.5695 0.3136
[INFO] i: 18 mission_id: 2103 rul_hat: 17.38 flight_time: 14.90 distance: 1073.81 R0: 0.04162 Q: 9.57 Req: 0.31356
[INFO] mission number: 18, sample number: 12, trajectory id <27> with path_time: 15.72 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0403 13.4623 0.3060
[INFO] i: 18 mission_id: 2104 rul_hat: 17.38 flight_time: 14.07 distance: 987.42 R0: 0.04029 Q: 13.46 Req: 0.30599
[INFO] mission number: 18, sample number: 13, trajectory id <28> with path_time: 16.01 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0491 15.5000 0.3158
[INFO] i: 18 mission_id: 2105 rul_hat: 17.38 flight_time: 16.02 distance: 1182.24 R0: 0.04910 Q: 15.50 Req: 0.31584
[INFO] mission number: 18, sample number: 14, trajectory id <28> with path_time: 16.01 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0556 9.4628 0.2840
[INFO] i: 18 mission_id: 2106 rul_hat: 17.38 flight_time: 16.02 distance: 1182.21 R0: 0.05564 Q: 9.46 Req: 0.28398
[INFO] mission number: 18, sample number: 15, trajectory id <28> with path_time: 16.01 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0654 8.7416 0.3126
[INFO] i: 18 mission_id: 2107 rul_hat: 17.38 flight_time: 14.10 distance: 1014.25 R0: 0.06544 Q: 8.74 Req: 0.31257
[INFO] mission number: 18, sample number: 16, trajectory id <27> with path_time: 15.72 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0484 14.5657 0.3175
[INFO] i: 18 mission_id: 2108 rul_hat: 17.38 flight_time: 5.08 distance: 410.85 R0: 0.04842 Q: 14.57 Req: 0.31746
[INFO] mission number: 18, sample number: 17, trajectory id <22> with path_time: 16.00 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0408 10.5811 0.3310
[INFO] i: 18 mission_id: 2109 rul_hat: 17.38 flight_time: 15.99 distance: 1181.12 R0: 0.04084 Q: 10.58 Req: 0.33101
[INFO] mission number: 18, sample number: 18, trajectory id <22> with path_time: 16.00 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0562 13.3235 0.3022
[INFO] i: 18 mission_id: 2110 rul_hat: 17.38 flight_time: 15.58 distance: 1141.95 R0: 0.05618 Q: 13.32 Req: 0.30220
[INFO] mission number: 18, sample number: 19, trajectory id <27> with path_time: 15.72 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0599 9.6875 0.3320
[INFO] i: 18 mission_id: 2111 rul_hat: 17.38 flight_time: 11.72 distance: 826.19 R0: 0.05986 Q: 9.69 Req: 0.33196
[INFO] mission number: 18, sample number: 20, trajectory id <28> with path_time: 16.01 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0454 11.4936 0.3300
[INFO] i: 18 mission_id: 2112 rul_hat: 17.38 flight_time: 8.20 distance: 604.24 R0: 0.04539 Q: 11.49 Req: 0.32999
[INFO] mission number: 18, sample number: 21, trajectory id <22> with path_time: 16.00 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0449 11.3753 0.3049
[INFO] i: 18 mission_id: 2113 rul_hat: 17.38 flight_time: 15.99 distance: 1181.21 R0: 0.04489 Q: 11.38 Req: 0.30494
[INFO] mission number: 18, sample number: 22, trajectory id <28> with path_time: 16.01 that meets constraint: path_t

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Bumping sigmax
[INFO] degradation parameters: 0.0595 8.5590 0.3293
[INFO] i: 18 mission_id: 2114 rul_hat: 17.38 flight_time: 16.02 distance: 1182.26 R0: 0.05952 Q: 8.56 Req: 0.32934
[INFO] mission number: 18, sample number: 23, trajectory id <27> with path_time: 15.72 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0500 11.0234 0.2834
[INFO] i: 18 mission_id: 2115 rul_hat: 17.38 flight_time: 11.58 distance: 810.33 R0: 0.05003 Q: 11.02 Req: 0.28339
[INFO] mission number: 18, sample number: 24, trajectory id <28> with path_time: 16.01 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0565 10.3578 0.3249
[INFO] i: 18 mission_id: 2116 rul_hat: 17.38 flight_time: 16.02 distance: 1182.30 R0: 0.05646 Q: 10.36 Req: 0.32488
[INFO] mission number: 18, sample number: 25, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0445 12.6896 0.2889
[INFO] i: 18 mission_id: 2117 rul_hat: 17.38 flight_time: 16.28 distance: 1214.54 R0: 0.04453 Q: 12.69 Req: 0.28894
Elapsed time is 4171.448248 seconds.
[INFO] mission number: 19, sample number: 1, trajectory id <27> with path_time: 15.72 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0674 9.9975 0.3194
[INFO] i: 19 mission_id: 2118 rul_hat: 16.72 flight_time: 15.60 distance: 1147.98 R0: 0.06737 Q: 10.00 Req: 0.31938
[INFO] mission number: 19, sample number: 2, trajectory id <22> with path_time: 16.00 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0715 8.5972 0.3386
[INFO] i: 19 mission_id: 2119 rul_hat: 16.72 flight_time: 0.52 distance: 60.64 R0: 0.07154 Q: 8.60 Req: 0.33862
[INFO] mission number: 19, sample number: 3, trajectory id <22> with path_time: 16.00 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0772 12.4616 0.3238
[INFO] i: 19 mission_id: 2120 rul_hat: 16.72 flight_time: 0.29 distance: 26.27 R0: 0.07722 Q: 12.46 Req: 0.32376
[INFO] mission number: 19, sample number: 4, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0661 4.2907 0.3405
[INFO] i: 19 mission_id: 2121 rul_hat: 16.72 flight_time: 0.07 distance: 8.54 R0: 0.06613 Q: 4.29 Req: 0.34052
[INFO] mission number: 19, sample number: 5, trajectory id <11> with path_time: 16.38 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0660 6.2009 0.3203
[INFO] i: 19 mission_id: 2122 rul_hat: 16.72 flight_time: 1.18 distance: 83.89 R0: 0.06598 Q: 6.20 Req: 0.32034
[INFO] mission number: 19, sample number: 6, trajectory id <22> with path_time: 16.00 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0356 10.2767 0.3586
[INFO] i: 19 mission_id: 2123 rul_hat: 16.72 flight_time: 0.56 distance: 66.05 R0: 0.03558 Q: 10.28 Req: 0.35855
[INFO] mission number: 19, sample number: 7, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0858 8.7730 0.3629
[INFO] i: 19 mission_id: 2124 rul_hat: 16.72 flight_time: 14.95 distance: 1078.53 R0: 0.08580 Q: 8.77 Req: 0.36293
[INFO] mission number: 19, sample number: 8, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
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Bumping sigmax
[INFO] degradation parameters: 0.0810 9.9405 0.4013
[INFO] i: 19 mission_id: 2125 rul_hat: 16.72 flight_time: 0.06 distance: 9.17 R0: 0.08099 Q: 9.94 Req: 0.40127
[INFO] mission number: 19, sample number: 9, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0584 12.7461 0.3429
[INFO] i: 19 mission_id: 2126 rul_hat: 16.72 flight_time: 0.06 distance: 8.77 R0: 0.05840 Q: 12.75 Req: 0.34291
[INFO] mission number: 19, sample number: 10, trajectory id <22> with path_time: 16.00 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0619 8.6301 0.2993
[INFO] i: 19 mission_id: 2127 rul_hat: 16.72 flight_time: 14.50 distance: 1061.70 R0: 0.06195 Q: 8.63 Req: 0.29927
[INFO] mission number: 19, sample number: 11, trajectory id <22> with path_time: 16.00 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0713 9.6690 0.3683
[INFO] i: 19 mission_id: 2128 rul_hat: 16.72 flight_time: 6.96 distance: 561.65 R0: 0.07129 Q: 9.67 Req: 0.36832
[INFO] mission number: 19, sample number: 12, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0819 13.4690 0.3282
[INFO] i: 19 mission_id: 2129 rul_hat: 16.72 flight_time: 0.07 distance: 7.47 R0: 0.08192 Q: 13.47 Req: 0.32825
[INFO] mission number: 19, sample number: 13, trajectory id <28> with path_time: 16.01 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0687 6.3452 0.3550
[INFO] i: 19 mission_id: 2130 rul_hat: 16.72 flight_time: 0.06 distance: 8.81 R0: 0.06872 Q: 6.35 Req: 0.35505
[INFO] mission number: 19, sample number: 14, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0707 8.4097 0.3288
[INFO] i: 19 mission_id: 2131 rul_hat: 16.72 flight_time: 0.09 distance: 7.62 R0: 0.07073 Q: 8.41 Req: 0.32880
[INFO] mission number: 19, sample number: 15, trajectory id <22> with path_time: 16.00 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0609 8.6054 0.3492
[INFO] i: 19 mission_id: 2132 rul_hat: 16.72 flight_time: 0.36 distance: 35.92 R0: 0.06091 Q: 8.61 Req: 0.34923
[INFO] mission number: 19, sample number: 16, trajectory id <22> with path_time: 16.00 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0587 11.7479 0.3438
[INFO] i: 19 mission_id: 2133 rul_hat: 16.72 flight_time: 6.18 distance: 479.72 R0: 0.05870 Q: 11.75 Req: 0.34382
[INFO] mission number: 19, sample number: 17, trajectory id <28> with path_time: 16.01 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0650 4.8373 0.3138
[INFO] i: 19 mission_id: 2134 rul_hat: 16.72 flight_time: 8.20 distance: 605.94 R0: 0.06499 Q: 4.84 Req: 0.31382
[INFO] mission number: 19, sample number: 18, trajectory id <27> with path_time: 15.72 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
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Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0649 10.9133 0.3116
[INFO] i: 19 mission_id: 2135 rul_hat: 16.72 flight_time: 5.08 distance: 410.96 R0: 0.06490 Q: 10.91 Req: 0.31156
[INFO] mission number: 19, sample number: 19, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0512 9.9388 0.3494
[INFO] i: 19 mission_id: 2136 rul_hat: 16.72 flight_time: 4.72 distance: 396.95 R0: 0.05124 Q: 9.94 Req: 0.34943
[INFO] mission number: 19, sample number: 20, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0551 9.4357 0.3619
[INFO] i: 19 mission_id: 2137 rul_hat: 16.72 flight_time: 15.75 distance: 1178.37 R0: 0.05510 Q: 9.44 Req: 0.36195
[INFO] mission number: 19, sample number: 21, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0725 13.4796 0.3312
[INFO] i: 19 mission_id: 2138 rul_hat: 16.72 flight_time: 14.90 distance: 1116.88 R0: 0.07248 Q: 13.48 Req: 0.33121
[INFO] mission number: 19, sample number: 22, trajectory id <27> with path_time: 15.72 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0777 7.3013 0.3175
[INFO] i: 19 mission_id: 2139 rul_hat: 16.72 flight_time: 1.08 distance: 90.03 R0: 0.07769 Q: 7.30 Req: 0.31749
[INFO] mission number: 19, sample number: 23, trajectory id <11> with path_time: 16.38 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0619 8.1060 0.3238
[INFO] i: 19 mission_id: 2140 rul_hat: 16.72 flight_time: 0.07 distance: 7.85 R0: 0.06188 Q: 8.11 Req: 0.32379
[INFO] mission number: 19, sample number: 24, trajectory id <27> with path_time: 15.72 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0580 7.1318 0.3288
[INFO] i: 19 mission_id: 2141 rul_hat: 16.72 flight_time: 5.16 distance: 423.35 R0: 0.05802 Q: 7.13 Req: 0.32875
[INFO] mission number: 19, sample number: 25, trajectory id <27> with path_time: 15.72 that meets constraint: path_t
Bumping sigmax
[INFO] degradation parameters: 0.0554 12.8794 0.3527
[INFO] i: 19 mission_id: 2142 rul_hat: 16.72 flight_time: 10.38 distance: 742.47 R0: 0.05543 Q: 12.88 Req: 0.35270
Elapsed time is 1679.154412 seconds.
[INFO] mission number: 20, sample number: 1, trajectory id <30> with path_time: 15.06 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0817 10.0611 0.3971
[INFO] i: 20 mission_id: 2143 rul_hat: 16.06 flight_time: 9.45 distance: 712.92 R0: 0.08174 Q: 10.06 Req: 0.39711
[INFO] mission number: 20, sample number: 2, trajectory id <30> with path_time: 15.06 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0505 10.1290 0.3497
[INFO] i: 20 mission_id: 2144 rul_hat: 16.06 flight_time: 0.05 distance: 6.26 R0: 0.05052 Q: 10.13 Req: 0.34967
[INFO] mission number: 20, sample number: 3, trajectory id <30> with path_time: 15.06 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.0860 7.4391 0.3591
[INFO] i: 20 mission_id: 2145 rul_hat: 16.06 flight_time: 14.62 distance: 1078.33 R0: 0.08604 Q: 7.44 Req: 0.35909
```

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[INFO] mission number: 20, sample number: 4, trajectory id <22> with path_time: 16.00 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0700 5.8062 0.3604
[INFO] i: 20 mission_id: 2146 rul_hat: 16.06 flight_time: 0.05 distance: 5.13 R0: 0.07005 Q: 5.81 Req: 0.36045
[INFO] mission number: 20, sample number: 5, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0850 4.5969 0.3725
[INFO] i: 20 mission_id: 2147 rul_hat: 16.06 flight_time: 0.07 distance: 9.63 R0: 0.08495 Q: 4.60 Req: 0.37252
[INFO] mission number: 20, sample number: 6, trajectory id <27> with path_time: 15.72 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0748 9.6006 0.3636
[INFO] i: 20 mission_id: 2148 rul_hat: 16.06 flight_time: 0.04 distance: 7.29 R0: 0.07481 Q: 9.60 Req: 0.36361
[INFO] mission number: 20, sample number: 7, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0882 6.3668 0.3502
[INFO] i: 20 mission_id: 2149 rul_hat: 16.06 flight_time: 0.06 distance: 8.42 R0: 0.08821 Q: 6.37 Req: 0.35024
[INFO] mission number: 20, sample number: 8, trajectory id <22> with path_time: 16.00 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0896 9.9314 0.4077
[INFO] i: 20 mission_id: 2150 rul_hat: 16.06 flight_time: 0.05 distance: 5.34 R0: 0.08957 Q: 9.93 Req: 0.40771
[INFO] mission number: 20, sample number: 9, trajectory id <28> with path_time: 16.01 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0797 11.4952 0.3878
[INFO] i: 20 mission_id: 2151 rul_hat: 16.06 flight_time: 0.06 distance: 8.87 R0: 0.07968 Q: 11.50 Req: 0.38785
[INFO] mission number: 20, sample number: 10, trajectory id <30> with path_time: 15.06 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0905 10.5889 0.3872
[INFO] i: 20 mission_id: 2152 rul_hat: 16.06 flight_time: 0.08 distance: 7.70 R0: 0.09047 Q: 10.59 Req: 0.38718
[INFO] mission number: 20, sample number: 11, trajectory id <27> with path_time: 15.72 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0798 6.7917 0.3793
[INFO] i: 20 mission_id: 2153 rul_hat: 16.06 flight_time: 0.04 distance: 6.29 R0: 0.07978 Q: 6.79 Req: 0.37927
[INFO] mission number: 20, sample number: 12, trajectory id <27> with path_time: 15.72 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0829 8.8414 0.3801
[INFO] i: 20 mission_id: 2154 rul_hat: 16.06 flight_time: 0.06 distance: 8.24 R0: 0.08289 Q: 8.84 Req: 0.38008
[INFO] mission number: 20, sample number: 13, trajectory id <30> with path_time: 15.06 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0648 13.4398 0.3318
[INFO] i: 20 mission_id: 2155 rul_hat: 16.06 flight_time: 0.05 distance: 6.38 R0: 0.06477 Q: 13.44 Req: 0.33180
[INFO] mission number: 20, sample number: 14, trajectory id <22> with path_time: 16.00 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
```

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[INFO] degradation parameters: 0.0758 6.8918 0.3749
[INFO] i: 20 mission_id: 2156 rul_hat: 16.06 flight_time: 0.62 distance: 75.13 R0: 0.07578 Q: 6.89 Req: 0.37488
[INFO] mission number: 20, sample number: 15, trajectory id <30> with path_time: 15.06 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0716 8.2046 0.3793
[INFO] i: 20 mission_id: 2157 rul_hat: 16.06 flight_time: 0.29 distance: 25.15 R0: 0.07156 Q: 8.20 Req: 0.37934
[INFO] mission number: 20, sample number: 16, trajectory id <30> with path_time: 15.06 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0727 7.0510 0.3743
[INFO] i: 20 mission_id: 2158 rul_hat: 16.06 flight_time: 1.74 distance: 148.18 R0: 0.07272 Q: 7.05 Req: 0.37428
[INFO] mission number: 20, sample number: 17, trajectory id <22> with path_time: 16.00 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0926 9.0709 0.3766
[INFO] i: 20 mission_id: 2159 rul_hat: 16.06 flight_time: 0.29 distance: 26.74 R0: 0.09263 Q: 9.07 Req: 0.37659
[INFO] mission number: 20, sample number: 18, trajectory id <28> with path_time: 16.01 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0684 6.7144 0.3378
[INFO] i: 20 mission_id: 2160 rul_hat: 16.06 flight_time: 0.06 distance: 9.06 R0: 0.06845 Q: 6.71 Req: 0.33783
[INFO] mission number: 20, sample number: 19, trajectory id <22> with path_time: 16.00 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1002 4.3526 0.4024
[INFO] i: 20 mission_id: 2161 rul_hat: 16.06 flight_time: 0.46 distance: 50.11 R0: 0.10021 Q: 4.35 Req: 0.40239
[INFO] mission number: 20, sample number: 20, trajectory id <28> with path_time: 16.01 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0888 4.9745 0.3854
[INFO] i: 20 mission_id: 2162 rul_hat: 16.06 flight_time: 0.06 distance: 8.77 R0: 0.08878 Q: 4.97 Req: 0.38544
[INFO] mission number: 20, sample number: 21, trajectory id <28> with path_time: 16.01 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0727 4.9199 0.3943
[INFO] i: 20 mission_id: 2163 rul_hat: 16.06 flight_time: 0.06 distance: 8.83 R0: 0.07273 Q: 4.92 Req: 0.39432
[INFO] mission number: 20, sample number: 22, trajectory id <22> with path_time: 16.00 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0873 8.6356 0.3589
[INFO] i: 20 mission_id: 2164 rul_hat: 16.06 flight_time: 0.28 distance: 27.63 R0: 0.08730 Q: 8.64 Req: 0.35889
[INFO] mission number: 20, sample number: 23, trajectory id <22> with path_time: 16.00 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0848 9.4120 0.3227
[INFO] i: 20 mission_id: 2165 rul_hat: 16.06 flight_time: 0.05 distance: 5.26 R0: 0.08480 Q: 9.41 Req: 0.32273
[INFO] mission number: 20, sample number: 24, trajectory id <22> with path_time: 16.00 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
```

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[INFO] degradation parameters: 0.0867 13.1316 0.3421
[INFO] i: 20 mission_id: 2166 rul_hat: 16.06 flight_time: 0.05 distance: 4.42 R0: 0.08672 Q: 13.13 Req: 0.34209
[INFO] mission number: 20, sample number: 25, trajectory id <27> with path_time: 15.72 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0837 5.4803 0.3591
[INFO] i: 20 mission_id: 2167 rul_hat: 16.06 flight_time: 0.04 distance: 7.35 R0: 0.08372 Q: 5.48 Req: 0.35906
Elapsed time is 448.252715 seconds.
[INFO] mission number: 21, sample number: 1, trajectory id <23> with path_time: 14.87 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0863 3.7801 0.3796
[INFO] i: 21 mission_id: 2168 rul_hat: 15.40 flight_time: 0.06 distance: 11.27 R0: 0.08628 Q: 3.78 Req: 0.37958
[INFO] mission number: 21, sample number: 2, trajectory id <30> with path_time: 15.06 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0997 12.5412 0.4163
[INFO] i: 21 mission_id: 2169 rul_hat: 15.40 flight_time: 0.04 distance: 5.99 R0: 0.09974 Q: 12.54 Req: 0.41626
[INFO] mission number: 21, sample number: 3, trajectory id <29> with path_time: 14.74 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0928 8.9746 0.3919
[INFO] i: 21 mission_id: 2170 rul_hat: 15.40 flight_time: 0.04 distance: 5.66 R0: 0.09277 Q: 8.97 Req: 0.39192
[INFO] mission number: 21, sample number: 4, trajectory id <14> with path_time: 14.81 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1115 6.5611 0.4317
[INFO] i: 21 mission_id: 2171 rul_hat: 15.40 flight_time: 0.04 distance: 5.44 R0: 0.11151 Q: 6.56 Req: 0.43168
[INFO] mission number: 21, sample number: 5, trajectory id <23> with path_time: 14.87 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1031 6.1169 0.4247
[INFO] i: 21 mission_id: 2172 rul_hat: 15.40 flight_time: 0.05 distance: 10.22 R0: 0.10310 Q: 6.12 Req: 0.42472
[INFO] mission number: 21, sample number: 6, trajectory id <23> with path_time: 14.87 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1083 7.0730 0.4025
[INFO] i: 21 mission_id: 2173 rul_hat: 15.40 flight_time: 0.06 distance: 10.59 R0: 0.10826 Q: 7.07 Req: 0.40246
[INFO] mission number: 21, sample number: 7, trajectory id <23> with path_time: 14.87 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1039 10.1664 0.4279
[INFO] i: 21 mission_id: 2174 rul_hat: 15.40 flight_time: 0.05 distance: 10.42 R0: 0.10391 Q: 10.17 Req: 0.42792
[INFO] mission number: 21, sample number: 8, trajectory id <14> with path_time: 14.81 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0901 6.7929 0.3900
[INFO] i: 21 mission_id: 2175 rul_hat: 15.40 flight_time: 0.04 distance: 5.43 R0: 0.09011 Q: 6.79 Req: 0.39002
[INFO] mission number: 21, sample number: 9, trajectory id <29> with path_time: 14.74 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1124 7.0629 0.3563
[INFO] i: 21 mission_id: 2176 rul_hat: 15.40 flight_time: 0.04 distance: 5.45 R0: 0.11235 Q: 7.06 Req: 0.35629
[INFO] mission number: 21, sample number: 10, trajectory id <23> with path_time: 14.87 that meets constraint: path_t
Bumping sigmax
```

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Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1032 5.4090 0.4132
[INFO] i: 21 mission_id: 2177 rul_hat: 15.40 flight_time: 0.05 distance: 10.14 R0: 0.10320 Q: 5.41 Req: 0.41325
[INFO] mission number: 21, sample number: 11, trajectory id <29> with path_time: 14.74 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0993 7.9955 0.3850
[INFO] i: 21 mission_id: 2178 rul_hat: 15.40 flight_time: 0.04 distance: 5.78 R0: 0.09929 Q: 8.00 Req: 0.38498
[INFO] mission number: 21, sample number: 12, trajectory id <23> with path_time: 14.87 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0987 12.9121 0.3836
[INFO] i: 21 mission_id: 2179 rul_hat: 15.40 flight_time: 0.06 distance: 11.32 R0: 0.09869 Q: 12.91 Req: 0.38363
[INFO] mission number: 21, sample number: 13, trajectory id <14> with path_time: 14.81 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1083 10.2565 0.4386
[INFO] i: 21 mission_id: 2180 rul_hat: 15.40 flight_time: 0.04 distance: 5.67 R0: 0.10828 Q: 10.26 Req: 0.43861
[INFO] mission number: 21, sample number: 14, trajectory id <29> with path_time: 14.74 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0797 2.5114 0.3447
[INFO] i: 21 mission_id: 2181 rul_hat: 15.40 flight_time: 0.04 distance: 5.75 R0: 0.07973 Q: 2.51 Req: 0.34465
[INFO] mission number: 21, sample number: 15, trajectory id <29> with path_time: 14.74 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0900 5.0425 0.4009
[INFO] i: 21 mission_id: 2182 rul_hat: 15.40 flight_time: 0.18 distance: 14.89 R0: 0.09003 Q: 5.04 Req: 0.40093
[INFO] mission number: 21, sample number: 16, trajectory id <30> with path_time: 15.06 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0775 6.7058 0.4142
[INFO] i: 21 mission_id: 2183 rul_hat: 15.40 flight_time: 0.04 distance: 5.46 R0: 0.07751 Q: 6.71 Req: 0.41417
[INFO] mission number: 21, sample number: 17, trajectory id <29> with path_time: 14.74 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0936 3.5314 0.3879
[INFO] i: 21 mission_id: 2184 rul_hat: 15.40 flight_time: 0.08 distance: 8.95 R0: 0.09358 Q: 3.53 Req: 0.38789
[INFO] mission number: 21, sample number: 18, trajectory id <29> with path_time: 14.74 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1128 7.9368 0.4307
[INFO] i: 21 mission_id: 2185 rul_hat: 15.40 flight_time: 0.04 distance: 5.71 R0: 0.11282 Q: 7.94 Req: 0.43069
[INFO] mission number: 21, sample number: 19, trajectory id <23> with path_time: 14.87 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0842 5.3373 0.3413
[INFO] i: 21 mission_id: 2186 rul_hat: 15.40 flight_time: 0.05 distance: 9.94 R0: 0.08421 Q: 5.34 Req: 0.34133
[INFO] mission number: 21, sample number: 20, trajectory id <14> with path_time: 14.81 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0918 7.0878 0.3963
[INFO] i: 21 mission_id: 2187 rul_hat: 15.40 flight_time: 0.05 distance: 5.08 R0: 0.09175 Q: 7.09 Req: 0.39633
```

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[INFO] mission number: 21, sample number: 21, trajectory id <23> with path_time: 14.87 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1049 7.5078 0.4105
[INFO] i: 21 mission_id: 2188 rul_hat: 15.40 flight_time: 0.07 distance: 11.08 R0: 0.10492 Q: 7.51 Req: 0.41054
[INFO] mission number: 21, sample number: 22, trajectory id <14> with path_time: 14.81 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0820 4.3771 0.3581
[INFO] i: 21 mission_id: 2189 rul_hat: 15.40 flight_time: 0.04 distance: 5.50 R0: 0.08196 Q: 4.38 Req: 0.35810
[INFO] mission number: 21, sample number: 23, trajectory id <14> with path_time: 14.81 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0800 7.2847 0.4166
[INFO] i: 21 mission_id: 2190 rul_hat: 15.40 flight_time: 0.07 distance: 4.62 R0: 0.07997 Q: 7.28 Req: 0.41664
[INFO] mission number: 21, sample number: 24, trajectory id <14> with path_time: 14.81 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1037 8.8652 0.4287
[INFO] i: 21 mission_id: 2191 rul_hat: 15.40 flight_time: 0.05 distance: 5.04 R0: 0.10372 Q: 8.87 Req: 0.42869
[INFO] mission number: 21, sample number: 25, trajectory id <30> with path_time: 15.06 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0939 8.8162 0.3933
[INFO] i: 21 mission_id: 2192 rul_hat: 15.40 flight_time: 0.04 distance: 5.65 R0: 0.09394 Q: 8.82 Req: 0.39327
Elapsed time is 112.257424 seconds.
[INFO] mission number: 22, sample number: 1, trajectory id <10> with path_time: 13.57 that meets constraint: path_ti
Bumping sigmax
[INFO] degradation parameters: 0.1334 1.5917 0.4709
[INFO] i: 22 mission_id: 2193 rul_hat: 14.74 flight_time: 0.05 distance: 6.40 R0: 0.13338 Q: 1.59 Req: 0.47088
[INFO] mission number: 22, sample number: 2, trajectory id <9> with path_time: 13.45 that meets constraint: path_tim
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1205 4.1261 0.4378
[INFO] i: 22 mission_id: 2194 rul_hat: 14.74 flight_time: 0.04 distance: 7.30 R0: 0.12046 Q: 4.13 Req: 0.43784
[INFO] mission number: 22, sample number: 3, trajectory id <13> with path_time: 13.94 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1324 3.6369 0.4028
[INFO] i: 22 mission_id: 2195 rul_hat: 14.74 flight_time: 0.04 distance: 6.47 R0: 0.13236 Q: 3.64 Req: 0.40280
[INFO] mission number: 22, sample number: 4, trajectory id <8> with path_time: 13.31 that meets constraint: path_tim
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1218 3.0654 0.5058
[INFO] i: 22 mission_id: 2196 rul_hat: 14.74 flight_time: 0.05 distance: 6.21 R0: 0.12180 Q: 3.07 Req: 0.50576
[INFO] mission number: 22, sample number: 5, trajectory id <9> with path_time: 13.45 that meets constraint: path_tim
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1263 7.7571 0.4308
[INFO] i: 22 mission_id: 2197 rul_hat: 14.74 flight_time: 0.04 distance: 7.15 R0: 0.12630 Q: 7.76 Req: 0.43077
[INFO] mission number: 22, sample number: 6, trajectory id <9> with path_time: 13.45 that meets constraint: path_tim
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1217 1.1989 0.4560
[INFO] i: 22 mission_id: 2198 rul_hat: 14.74 flight_time: 0.04 distance: 7.16 R0: 0.12173 Q: 1.20 Req: 0.45599
[INFO] mission number: 22, sample number: 7, trajectory id <8> with path_time: 13.31 that meets constraint: path_tim
```

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Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1185 1.6531 0.4251
[INFO] i: 22 mission_id: 2199 rul_hat: 14.74 flight_time: 0.04 distance: 5.46 R0: 0.11845 Q: 1.65 Req: 0.42508
[INFO] mission number: 22, sample number: 8, trajectory id <9> with path_time: 13.45 that meets constraint: path_tim
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1319 6.0106 0.4318
[INFO] i: 22 mission_id: 2200 rul_hat: 14.74 flight_time: 0.04 distance: 7.53 R0: 0.13194 Q: 6.01 Req: 0.43177
[INFO] mission number: 22, sample number: 9, trajectory id <10> with path_time: 13.57 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1196 0.7925 0.4468
[INFO] i: 22 mission_id: 2201 rul_hat: 14.74 flight_time: 0.05 distance: 6.90 R0: 0.11961 Q: 0.79 Req: 0.44682
[INFO] mission number: 22, sample number: 10, trajectory id <13> with path_time: 13.94 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1158 7.9936 0.4471
[INFO] i: 22 mission_id: 2202 rul_hat: 14.74 flight_time: 0.04 distance: 6.43 R0: 0.11582 Q: 7.99 Req: 0.44707
[INFO] mission number: 22, sample number: 11, trajectory id <10> with path_time: 13.57 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1193 7.6637 0.4638
[INFO] i: 22 mission_id: 2203 rul_hat: 14.74 flight_time: 0.04 distance: 6.55 R0: 0.11933 Q: 7.66 Req: 0.46384
[INFO] mission number: 22, sample number: 12, trajectory id <8> with path_time: 13.31 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1203 2.8490 0.4133
[INFO] i: 22 mission_id: 2204 rul_hat: 14.74 flight_time: 0.04 distance: 5.44 R0: 0.12033 Q: 2.85 Req: 0.41326
[INFO] mission number: 22, sample number: 13, trajectory id <8> with path_time: 13.31 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0956 1.9118 0.4138
[INFO] i: 22 mission_id: 2205 rul_hat: 14.74 flight_time: 0.05 distance: 5.63 R0: 0.09561 Q: 1.91 Req: 0.41378
[INFO] mission number: 22, sample number: 14, trajectory id <8> with path_time: 13.31 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1242 6.6130 0.4445
[INFO] i: 22 mission_id: 2206 rul_hat: 14.74 flight_time: 0.04 distance: 5.40 R0: 0.12419 Q: 6.61 Req: 0.44454
[INFO] mission number: 22, sample number: 15, trajectory id <13> with path_time: 13.94 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1277 3.0445 0.5369
[INFO] i: 22 mission_id: 2207 rul_hat: 14.74 flight_time: 0.05 distance: 6.60 R0: 0.12769 Q: 3.04 Req: 0.53695
[INFO] mission number: 22, sample number: 16, trajectory id <10> with path_time: 13.57 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1157 2.3474 0.4676
[INFO] i: 22 mission_id: 2208 rul_hat: 14.74 flight_time: 0.04 distance: 6.40 R0: 0.11571 Q: 2.35 Req: 0.46763
[INFO] mission number: 22, sample number: 17, trajectory id <13> with path_time: 13.94 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1093 2.9858 0.4584
[INFO] i: 22 mission_id: 2209 rul_hat: 14.74 flight_time: 0.04 distance: 6.48 R0: 0.10927 Q: 2.99 Req: 0.45842
```

```
[INFO] mission number: 22, sample number: 18, trajectory id <8> with path_time: 13.31 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1380 5.6850 0.4935
[INFO] i: 22 mission_id: 2210 rul_hat: 14.74 flight_time: 0.04 distance: 5.50 R0: 0.13795 Q: 5.69 Req: 0.49345
[INFO] mission number: 22, sample number: 19, trajectory id <10> with path_time: 13.57 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1419 6.8158 0.4468
[INFO] i: 22 mission_id: 2211 rul_hat: 14.74 flight_time: 0.05 distance: 6.60 R0: 0.14188 Q: 6.82 Req: 0.44678
[INFO] mission number: 22, sample number: 20, trajectory id <8> with path_time: 13.31 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1268 5.5247 0.4466
[INFO] i: 22 mission_id: 2212 rul_hat: 14.74 flight_time: 0.05 distance: 6.39 R0: 0.12675 Q: 5.52 Req: 0.44665
[INFO] mission number: 22, sample number: 21, trajectory id <9> with path_time: 13.45 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1005 8.7738 0.4704
[INFO] i: 22 mission_id: 2213 rul_hat: 14.74 flight_time: 0.04 distance: 7.15 R0: 0.10048 Q: 8.77 Req: 0.47038
[INFO] mission number: 22, sample number: 22, trajectory id <13> with path_time: 13.94 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1211 1.7295 0.3927
[INFO] i: 22 mission_id: 2214 rul_hat: 14.74 flight_time: 0.04 distance: 6.15 R0: 0.12110 Q: 1.73 Req: 0.39273
[INFO] mission number: 22, sample number: 23, trajectory id <8> with path_time: 13.31 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.0892 6.9457 0.4709
[INFO] i: 22 mission_id: 2215 rul_hat: 14.74 flight_time: 0.05 distance: 6.02 R0: 0.08923 Q: 6.95 Req: 0.47090
[INFO] mission number: 22, sample number: 24, trajectory id <10> with path_time: 13.57 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1389 7.4472 0.4382
[INFO] i: 22 mission_id: 2216 rul_hat: 14.74 flight_time: 0.05 distance: 6.17 R0: 0.13891 Q: 7.45 Req: 0.43820
[INFO] mission number: 22, sample number: 25, trajectory id <8> with path_time: 13.31 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1126 8.3356 0.4396
[INFO] i: 22 mission_id: 2217 rul_hat: 14.74 flight_time: 0.05 distance: 6.29 R0: 0.11262 Q: 8.34 Req: 0.43962
Elapsed time is 112.647774 seconds.
[INFO] mission number: 23, sample number: 1, trajectory id <10> with path_time: 13.57 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1463 6.6599 0.5107
[INFO] i: 23 mission_id: 2218 rul_hat: 14.08 flight_time: 0.04 distance: 6.79 R0: 0.14626 Q: 6.66 Req: 0.51072
[INFO] mission number: 23, sample number: 2, trajectory id <13> with path_time: 13.94 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1832 2.2135 0.5159
[INFO] i: 23 mission_id: 2219 rul_hat: 14.08 flight_time: 0.05 distance: 6.37 R0: 0.18322 Q: 2.21 Req: 0.51594
[INFO] mission number: 23, sample number: 3, trajectory id <10> with path_time: 13.57 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
```

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Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1502 3.7068 0.4989
[INFO] i: 23 mission_id: 2220 rul_hat: 14.08 flight_time: 0.05 distance: 7.85 R0: 0.15016 Q: 3.71 Req: 0.49889
[INFO] mission number: 23, sample number: 4, trajectory id <13> with path_time: 13.94 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1536 2.7376 0.5358
[INFO] i: 23 mission_id: 2221 rul_hat: 14.08 flight_time: 0.05 distance: 6.58 R0: 0.15358 Q: 2.74 Req: 0.53580
[INFO] mission number: 23, sample number: 5, trajectory id <8> with path_time: 13.31 that meets constraint: path_tim
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1318 4.9494 0.4634
[INFO] i: 23 mission_id: 2222 rul_hat: 14.08 flight_time: 0.05 distance: 6.67 R0: 0.13182 Q: 4.95 Req: 0.46339
[INFO] mission number: 23, sample number: 6, trajectory id <10> with path_time: 13.57 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1459 0.0822 0.5020
[INFO] i: 23 mission_id: 2223 rul_hat: 14.08 flight_time: 0.04 distance: 6.64 R0: 0.14590 Q: 0.08 Req: 0.50197
[INFO] mission number: 23, sample number: 7, trajectory id <13> with path_time: 13.94 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1583 7.4032 0.4089
[INFO] i: 23 mission_id: 2224 rul_hat: 14.08 flight_time: 0.05 distance: 6.56 R0: 0.15827 Q: 7.40 Req: 0.40887
[INFO] mission number: 23, sample number: 8, trajectory id <13> with path_time: 13.94 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1480 0.3546 0.4402
[INFO] i: 23 mission_id: 2225 rul_hat: 14.08 flight_time: 0.05 distance: 6.87 R0: 0.14803 Q: 0.35 Req: 0.44015
[INFO] mission number: 23, sample number: 9, trajectory id <9> with path_time: 13.45 that meets constraint: path_tim
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1531 5.0014 0.5080
[INFO] i: 23 mission_id: 2226 rul_hat: 14.08 flight_time: 0.05 distance: 7.41 R0: 0.15309 Q: 5.00 Req: 0.50801
[INFO] mission number: 23, sample number: 10, trajectory id <10> with path_time: 13.57 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1407 4.9716 0.4846
[INFO] i: 23 mission_id: 2227 rul_hat: 14.08 flight_time: 0.05 distance: 6.64 R0: 0.14073 Q: 4.97 Req: 0.48463
[INFO] mission number: 23, sample number: 11, trajectory id <13> with path_time: 13.94 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1507 2.9876 0.5024
[INFO] i: 23 mission_id: 2228 rul_hat: 14.08 flight_time: 0.05 distance: 6.18 R0: 0.15070 Q: 2.99 Req: 0.50238
[INFO] mission number: 23, sample number: 12, trajectory id <10> with path_time: 13.57 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1672 2.3222 0.4567
[INFO] i: 23 mission_id: 2229 rul_hat: 14.08 flight_time: 0.05 distance: 6.69 R0: 0.16717 Q: 2.32 Req: 0.45670
[INFO] mission number: 23, sample number: 13, trajectory id <10> with path_time: 13.57 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
```

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Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1527 3.9381 0.5020
[INFO] i: 23 mission_id: 2230 rul_hat: 14.08 flight_time: 0.05 distance: 7.18 R0: 0.15274 Q: 3.94 Req: 0.50204
[INFO] mission number: 23, sample number: 14, trajectory id <8> with path_time: 13.31 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1702 5.0931 0.4820
[INFO] i: 23 mission_id: 2231 rul_hat: 14.08 flight_time: 0.05 distance: 6.44 R0: 0.17019 Q: 5.09 Req: 0.48203
[INFO] mission number: 23, sample number: 15, trajectory id <8> with path_time: 13.31 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1510 1.6320 0.4491
[INFO] i: 23 mission_id: 2232 rul_hat: 14.08 flight_time: 0.05 distance: 6.21 R0: 0.15096 Q: 1.63 Req: 0.44910
[INFO] mission number: 23, sample number: 16, trajectory id <8> with path_time: 13.31 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1590 0.6896 0.4874
[INFO] i: 23 mission_id: 2233 rul_hat: 14.08 flight_time: 0.05 distance: 6.07 R0: 0.15896 Q: 0.69 Req: 0.48736
[INFO] mission number: 23, sample number: 17, trajectory id <10> with path_time: 13.57 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1594 2.8369 0.5584
[INFO] i: 23 mission_id: 2234 rul_hat: 14.08 flight_time: 0.05 distance: 6.56 R0: 0.15937 Q: 2.84 Req: 0.55842
[INFO] mission number: 23, sample number: 18, trajectory id <13> with path_time: 13.94 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1593 3.7914 0.4813
[INFO] i: 23 mission_id: 2235 rul_hat: 14.08 flight_time: 0.05 distance: 6.63 R0: 0.15926 Q: 3.79 Req: 0.48131
[INFO] mission number: 23, sample number: 19, trajectory id <9> with path_time: 13.45 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1764 3.1290 0.4967
[INFO] i: 23 mission_id: 2236 rul_hat: 14.08 flight_time: 0.05 distance: 7.48 R0: 0.17642 Q: 3.13 Req: 0.49672
[INFO] mission number: 23, sample number: 20, trajectory id <9> with path_time: 13.45 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1582 3.8652 0.5028
[INFO] i: 23 mission_id: 2237 rul_hat: 14.08 flight_time: 0.05 distance: 8.13 R0: 0.15823 Q: 3.87 Req: 0.50280
[INFO] mission number: 23, sample number: 21, trajectory id <9> with path_time: 13.45 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1720 2.9358 0.4852
[INFO] i: 23 mission_id: 2238 rul_hat: 14.08 flight_time: 0.05 distance: 7.14 R0: 0.17203 Q: 2.94 Req: 0.48519
[INFO] mission number: 23, sample number: 22, trajectory id <10> with path_time: 13.57 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1594 2.7542 0.4799
[INFO] i: 23 mission_id: 2239 rul_hat: 14.08 flight_time: 0.05 distance: 7.29 R0: 0.15941 Q: 2.75 Req: 0.47989
```

[INFO] mission number: 23, sample number: 23, trajectory id <8> with path_time: 13.31 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1638 1.1583 0.4827
[INFO] i: 23 mission_id: 2240 rul_hat: 14.08 flight_time: 0.05 distance: 6.19 R0: 0.16379 Q: 1.16 Req: 0.48265
[INFO] mission number: 23, sample number: 24, trajectory id <8> with path_time: 13.31 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1391 2.0254 0.4941
[INFO] i: 23 mission_id: 2241 rul_hat: 14.08 flight_time: 0.05 distance: 6.21 R0: 0.13910 Q: 2.03 Req: 0.49415
[INFO] mission number: 23, sample number: 25, trajectory id <10> with path_time: 13.57 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1315 2.7829 0.5236
[INFO] i: 23 mission_id: 2242 rul_hat: 14.08 flight_time: 0.05 distance: 6.72 R0: 0.13153 Q: 2.78 Req: 0.52355
Elapsed time is 110.663166 seconds.
[INFO] mission number: 24, sample number: 1, trajectory id <5> with path_time: 13.30 that meets constraint: path_tim
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2151 2.6689 0.5582
[INFO] i: 24 mission_id: 2243 rul_hat: 13.42 flight_time: 0.04 distance: 7.08 R0: 0.21507 Q: 2.67 Req: 0.55824
[INFO] mission number: 24, sample number: 2, trajectory id <24> with path_time: 12.59 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1914 2.7830 0.5707
[INFO] i: 24 mission_id: 2244 rul_hat: 13.42 flight_time: 0.05 distance: 6.88 R0: 0.19141 Q: 2.78 Req: 0.57070
[INFO] mission number: 24, sample number: 3, trajectory id <5> with path_time: 13.30 that meets constraint: path_tim
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2083 3.0969 0.5328
[INFO] i: 24 mission_id: 2245 rul_hat: 13.42 flight_time: 0.05 distance: 7.19 R0: 0.20832 Q: 3.10 Req: 0.53278
[INFO] mission number: 24, sample number: 4, trajectory id <4> with path_time: 12.49 that meets constraint: path_tim
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1901 3.0994 0.5478
[INFO] i: 24 mission_id: 2246 rul_hat: 13.42 flight_time: 0.05 distance: 6.94 R0: 0.19014 Q: 3.10 Req: 0.54779
[INFO] mission number: 24, sample number: 5, trajectory id <5> with path_time: 13.30 that meets constraint: path_tim
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1543 3.6786 0.5421
[INFO] i: 24 mission_id: 2247 rul_hat: 13.42 flight_time: 0.05 distance: 7.30 R0: 0.15427 Q: 3.68 Req: 0.54212
[INFO] mission number: 24, sample number: 6, trajectory id <24> with path_time: 12.59 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1785 0.0638 0.5487
[INFO] i: 24 mission_id: 2248 rul_hat: 13.42 flight_time: 0.05 distance: 6.39 R0: 0.17849 Q: 0.06 Req: 0.54867
[INFO] mission number: 24, sample number: 7, trajectory id <24> with path_time: 12.59 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax

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Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2047 2.2524 0.5691
[INFO] i: 24 mission_id: 2249 rul_hat: 13.42 flight_time: 0.05 distance: 6.98 R0: 0.20469 Q: 2.25 Req: 0.56913
[INFO] mission number: 24, sample number: 8, trajectory id <4> with path_time: 12.49 that meets constraint: path_tim
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2058 3.5529 0.5479
[INFO] i: 24 mission_id: 2250 rul_hat: 13.42 flight_time: 0.05 distance: 6.81 R0: 0.20583 Q: 3.55 Req: 0.54791
[INFO] mission number: 24, sample number: 9, trajectory id <8> with path_time: 13.31 that meets constraint: path_tim
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2118 3.5562 0.5732
[INFO] i: 24 mission_id: 2251 rul_hat: 13.42 flight_time: 0.05 distance: 6.73 R0: 0.21179 Q: 3.56 Req: 0.57325
[INFO] mission number: 24, sample number: 10, trajectory id <4> with path_time: 12.49 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2075 0.7064 0.5629
[INFO] i: 24 mission_id: 2252 rul_hat: 13.42 flight_time: 0.05 distance: 6.82 R0: 0.20753 Q: 0.71 Req: 0.56294
[INFO] mission number: 24, sample number: 11, trajectory id <24> with path_time: 12.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1779 0.8904 0.5495
[INFO] i: 24 mission_id: 2253 rul_hat: 13.42 flight_time: 0.05 distance: 7.06 R0: 0.17786 Q: 0.89 Req: 0.54954
[INFO] mission number: 24, sample number: 12, trajectory id <8> with path_time: 13.31 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1836 2.2724 0.5607
[INFO] i: 24 mission_id: 2254 rul_hat: 13.42 flight_time: 0.05 distance: 6.75 R0: 0.18356 Q: 2.27 Req: 0.56069
[INFO] mission number: 24, sample number: 13, trajectory id <8> with path_time: 13.31 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1780 0.6610 0.5469
[INFO] i: 24 mission_id: 2255 rul_hat: 13.42 flight_time: 0.05 distance: 6.84 R0: 0.17800 Q: 0.66 Req: 0.54689
[INFO] mission number: 24, sample number: 14, trajectory id <5> with path_time: 13.30 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1796 2.4966 0.5350
[INFO] i: 24 mission_id: 2256 rul_hat: 13.42 flight_time: 0.05 distance: 7.17 R0: 0.17961 Q: 2.50 Req: 0.53504
[INFO] mission number: 24, sample number: 15, trajectory id <5> with path_time: 13.30 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2146 0.0952 0.5949
[INFO] i: 24 mission_id: 2257 rul_hat: 13.42 flight_time: 0.05 distance: 7.07 R0: 0.21456 Q: 0.10 Req: 0.59494
[INFO] mission number: 24, sample number: 16, trajectory id <4> with path_time: 12.49 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
```

```
[INFO] degradation parameters: 0.1900 4.0597 0.5647
[INFO] i: 24 mission_id: 2258 rul_hat: 13.42 flight_time: 0.05 distance: 6.83 R0: 0.19001 Q: 4.06 Req: 0.56473
[INFO] mission number: 24, sample number: 17, trajectory id <4> with path_time: 12.49 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2153 1.8735 0.5566
[INFO] i: 24 mission_id: 2259 rul_hat: 13.42 flight_time: 0.05 distance: 6.81 R0: 0.21534 Q: 1.87 Req: 0.55659
[INFO] mission number: 24, sample number: 18, trajectory id <5> with path_time: 13.30 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1939 0.8824 0.5692
[INFO] i: 24 mission_id: 2260 rul_hat: 13.42 flight_time: 0.05 distance: 7.09 R0: 0.19393 Q: 0.88 Req: 0.56917
[INFO] mission number: 24, sample number: 19, trajectory id <8> with path_time: 13.31 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1826 1.0844 0.4967
[INFO] i: 24 mission_id: 2261 rul_hat: 13.42 flight_time: 0.05 distance: 6.92 R0: 0.18260 Q: 1.08 Req: 0.49669
[INFO] mission number: 24, sample number: 20, trajectory id <5> with path_time: 13.30 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1916 1.3492 0.6006
[INFO] i: 24 mission_id: 2262 rul_hat: 13.42 flight_time: 0.05 distance: 7.44 R0: 0.19165 Q: 1.35 Req: 0.60058
[INFO] mission number: 24, sample number: 21, trajectory id <5> with path_time: 13.30 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2094 5.5008 0.5456
[INFO] i: 24 mission_id: 2263 rul_hat: 13.42 flight_time: 0.05 distance: 7.18 R0: 0.20940 Q: 5.50 Req: 0.54557
[INFO] mission number: 24, sample number: 22, trajectory id <24> with path_time: 12.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2085 7.2075 0.5901
[INFO] i: 24 mission_id: 2264 rul_hat: 13.42 flight_time: 0.05 distance: 6.99 R0: 0.20854 Q: 7.21 Req: 0.59011
[INFO] mission number: 24, sample number: 23, trajectory id <5> with path_time: 13.30 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1927 1.7028 0.5548
[INFO] i: 24 mission_id: 2265 rul_hat: 13.42 flight_time: 0.05 distance: 7.20 R0: 0.19271 Q: 1.70 Req: 0.55481
[INFO] mission number: 24, sample number: 24, trajectory id <5> with path_time: 13.30 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2072 5.8777 0.6450
[INFO] i: 24 mission_id: 2266 rul_hat: 13.42 flight_time: 0.05 distance: 7.09 R0: 0.20720 Q: 5.88 Req: 0.64500
[INFO] mission number: 24, sample number: 25, trajectory id <24> with path_time: 12.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.1941 5.2132 0.5614
[INFO] i: 24 mission_id: 2267 rul_hat: 13.42 flight_time: 0.05 distance: 6.47 R0: 0.19411 Q: 5.21 Req: 0.56139
Elapsed time is 104.559811 seconds.
```

```
[INFO] mission number: 25, sample number: 1, trajectory id <4> with path_time: 12.49 that meets constraint: path_tim
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2732 4.4628 0.6160
[INFO] i: 25 mission_id: 2268 rul_hat: 12.76 flight_time: 0.05 distance: 6.84 R0: 0.27315 Q: 4.46 Req: 0.61601
[INFO] mission number: 25, sample number: 2, trajectory id <4> with path_time: 12.49 that meets constraint: path_tim
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2395 3.1592 0.6384
[INFO] i: 25 mission_id: 2269 rul_hat: 12.76 flight_time: 0.05 distance: 7.01 R0: 0.23954 Q: 3.16 Req: 0.63843
[INFO] mission number: 25, sample number: 3, trajectory id <18> with path_time: 11.78 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2180 0.4914 0.5843
[INFO] i: 25 mission_id: 2270 rul_hat: 12.76 flight_time: 0.05 distance: 6.80 R0: 0.21797 Q: 0.49 Req: 0.58428
[INFO] mission number: 25, sample number: 4, trajectory id <24> with path_time: 12.59 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2398 5.6710 0.6539
[INFO] i: 25 mission_id: 2271 rul_hat: 12.76 flight_time: 0.05 distance: 7.04 R0: 0.23977 Q: 5.67 Req: 0.65392
[INFO] mission number: 25, sample number: 5, trajectory id <25> with path_time: 11.53 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2480 3.4977 0.6314
[INFO] i: 25 mission_id: 2272 rul_hat: 12.76 flight_time: 0.05 distance: 6.27 R0: 0.24799 Q: 3.50 Req: 0.63142
[INFO] mission number: 25, sample number: 6, trajectory id <18> with path_time: 11.78 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2168 1.6191 0.6698
[INFO] i: 25 mission_id: 2273 rul_hat: 12.76 flight_time: 0.05 distance: 6.81 R0: 0.21679 Q: 1.62 Req: 0.66979
[INFO] mission number: 25, sample number: 7, trajectory id <24> with path_time: 12.59 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2327 2.6697 0.6225
[INFO] i: 25 mission_id: 2274 rul_hat: 12.76 flight_time: 0.04 distance: 6.52 R0: 0.23266 Q: 2.67 Req: 0.62250
[INFO] mission number: 25, sample number: 8, trajectory id <18> with path_time: 11.78 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2481 6.6150 0.6726
[INFO] i: 25 mission_id: 2275 rul_hat: 12.76 flight_time: 0.05 distance: 6.88 R0: 0.24815 Q: 6.62 Req: 0.67258
[INFO] mission number: 25, sample number: 9, trajectory id <25> with path_time: 11.53 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2267 3.2313 0.6503
[INFO] i: 25 mission_id: 2276 rul_hat: 12.76 flight_time: 0.04 distance: 6.12 R0: 0.22669 Q: 3.23 Req: 0.65032
[INFO] mission number: 25, sample number: 10, trajectory id <18> with path_time: 11.78 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2234 1.1201 0.6410
[INFO] i: 25 mission_id: 2277 rul_hat: 12.76 flight_time: 0.04 distance: 6.58 R0: 0.22335 Q: 1.12 Req: 0.64098
[INFO] mission number: 25, sample number: 11, trajectory id <4> with path_time: 12.49 that meets constraint: path_ti
Bumping sigmax
```

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Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2163 0.0821 0.6425
[INFO] i: 25 mission_id: 2278 rul_hat: 12.76 flight_time: 0.05 distance: 7.22 R0: 0.21626 Q: 0.08 Req: 0.64253
[INFO] mission number: 25, sample number: 12, trajectory id <4> with path_time: 12.49 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2290 2.5364 0.6723
[INFO] i: 25 mission_id: 2279 rul_hat: 12.76 flight_time: 0.05 distance: 7.33 R0: 0.22899 Q: 2.54 Req: 0.67225
[INFO] mission number: 25, sample number: 13, trajectory id <18> with path_time: 11.78 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2266 1.9827 0.6806
[INFO] i: 25 mission_id: 2280 rul_hat: 12.76 flight_time: 0.04 distance: 5.04 R0: 0.22663 Q: 1.98 Req: 0.68058
[INFO] mission number: 25, sample number: 14, trajectory id <25> with path_time: 11.53 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2181 2.8877 0.6289
[INFO] i: 25 mission_id: 2281 rul_hat: 12.76 flight_time: 0.04 distance: 6.22 R0: 0.21814 Q: 2.89 Req: 0.62895
[INFO] mission number: 25, sample number: 15, trajectory id <18> with path_time: 11.78 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2486 0.2741 0.6242
[INFO] i: 25 mission_id: 2282 rul_hat: 12.76 flight_time: 0.05 distance: 6.86 R0: 0.24863 Q: 0.27 Req: 0.62422
[INFO] mission number: 25, sample number: 16, trajectory id <4> with path_time: 12.49 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2333 6.9974 0.6270
[INFO] i: 25 mission_id: 2283 rul_hat: 12.76 flight_time: 0.05 distance: 7.28 R0: 0.23332 Q: 7.00 Req: 0.62704
[INFO] mission number: 25, sample number: 17, trajectory id <24> with path_time: 12.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2083 0.1657 0.6694
[INFO] i: 25 mission_id: 2284 rul_hat: 12.76 flight_time: 0.05 distance: 6.62 R0: 0.20829 Q: 0.17 Req: 0.66942
[INFO] mission number: 25, sample number: 18, trajectory id <24> with path_time: 12.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2605 0.0822 0.6771
[INFO] i: 25 mission_id: 2285 rul_hat: 12.76 flight_time: 0.04 distance: 6.48 R0: 0.26051 Q: 0.08 Req: 0.67709
[INFO] mission number: 25, sample number: 19, trajectory id <24> with path_time: 12.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2314 1.6824 0.6382
[INFO] i: 25 mission_id: 2286 rul_hat: 12.76 flight_time: 0.04 distance: 6.57 R0: 0.23141 Q: 1.68 Req: 0.63816
[INFO] mission number: 25, sample number: 20, trajectory id <4> with path_time: 12.49 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2534 1.8481 0.6042
[INFO] i: 25 mission_id: 2287 rul_hat: 12.76 flight_time: 0.05 distance: 7.31 R0: 0.25336 Q: 1.85 Req: 0.60418
[INFO] mission number: 25, sample number: 21, trajectory id <25> with path_time: 11.53 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2447 3.4854 0.6643
```

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[INFO] i: 25 mission_id: 2288 rul_hat: 12.76 flight_time: 0.05 distance: 7.22 R0: 0.24465 Q: 3.49 Req: 0.66435
[INFO] mission number: 25, sample number: 22, trajectory id <24> with path_time: 12.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2334 2.0697 0.6122
[INFO] i: 25 mission_id: 2289 rul_hat: 12.76 flight_time: 0.05 distance: 6.53 R0: 0.23337 Q: 2.07 Req: 0.61219
[INFO] mission number: 25, sample number: 23, trajectory id <24> with path_time: 12.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2391 4.4024 0.6723
[INFO] i: 25 mission_id: 2290 rul_hat: 12.76 flight_time: 0.05 distance: 6.82 R0: 0.23910 Q: 4.40 Req: 0.67233
[INFO] mission number: 25, sample number: 24, trajectory id <4> with path_time: 12.49 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2491 2.6879 0.6127
[INFO] i: 25 mission_id: 2291 rul_hat: 12.76 flight_time: 0.05 distance: 7.35 R0: 0.24910 Q: 2.69 Req: 0.61269
[INFO] mission number: 25, sample number: 25, trajectory id <4> with path_time: 12.49 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2482 3.2521 0.6810
[INFO] i: 25 mission_id: 2292 rul_hat: 12.76 flight_time: 0.05 distance: 6.95 R0: 0.24824 Q: 3.25 Req: 0.68101
Elapsed time is 106.613484 seconds.
[INFO] mission number: 26, sample number: 1, trajectory id <18> with path_time: 11.78 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3048 5.2331 0.7365
[INFO] i: 26 mission_id: 2293 rul_hat: 12.10 flight_time: 0.04 distance: 5.05 R0: 0.30482 Q: 5.23 Req: 0.73646
[INFO] mission number: 26, sample number: 2, trajectory id <31> with path_time: 10.84 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2788 5.3625 0.7049
[INFO] i: 26 mission_id: 2294 rul_hat: 12.10 flight_time: 0.04 distance: 5.48 R0: 0.27877 Q: 5.36 Req: 0.70489
[INFO] mission number: 26, sample number: 3, trajectory id <18> with path_time: 11.78 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2807 5.4056 0.7425
[INFO] i: 26 mission_id: 2295 rul_hat: 12.10 flight_time: 0.03 distance: 5.15 R0: 0.28070 Q: 5.41 Req: 0.74253
[INFO] mission number: 26, sample number: 4, trajectory id <25> with path_time: 11.53 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2924 2.7419 0.7636
[INFO] i: 26 mission_id: 2296 rul_hat: 12.10 flight_time: 0.04 distance: 5.83 R0: 0.29238 Q: 2.74 Req: 0.76355
[INFO] mission number: 26, sample number: 5, trajectory id <25> with path_time: 11.53 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2984 1.3887 0.7218
[INFO] i: 26 mission_id: 2297 rul_hat: 12.10 flight_time: 0.04 distance: 5.82 R0: 0.29842 Q: 1.39 Req: 0.72185
[INFO] mission number: 26, sample number: 6, trajectory id <21> with path_time: 10.59 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2878 0.5675 0.7281
[INFO] i: 26 mission_id: 2298 rul_hat: 12.10 flight_time: 0.03 distance: 5.64 R0: 0.28777 Q: 0.57 Req: 0.72812
[INFO] mission number: 26, sample number: 7, trajectory id <18> with path_time: 11.78 that meets constraint: path_ti
```

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Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2968 0.8762 0.7405
[INFO] i: 26 mission_id: 2299 rul_hat: 12.10 flight_time: 0.03 distance: 5.37 R0: 0.29684 Q: 0.88 Req: 0.74047
[INFO] mission number: 26, sample number: 8, trajectory id <21> with path_time: 10.59 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2740 2.7655 0.7015
[INFO] i: 26 mission_id: 2300 rul_hat: 12.10 flight_time: 0.03 distance: 5.82 R0: 0.27402 Q: 2.77 Req: 0.70152
[INFO] mission number: 26, sample number: 9, trajectory id <18> with path_time: 11.78 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2933 0.2905 0.7022
[INFO] i: 26 mission_id: 2301 rul_hat: 12.10 flight_time: 0.03 distance: 5.11 R0: 0.29326 Q: 0.29 Req: 0.70217
[INFO] mission number: 26, sample number: 10, trajectory id <21> with path_time: 10.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2961 3.6839 0.7305
[INFO] i: 26 mission_id: 2302 rul_hat: 12.10 flight_time: 0.03 distance: 5.35 R0: 0.29613 Q: 3.68 Req: 0.73051
[INFO] mission number: 26, sample number: 11, trajectory id <21> with path_time: 10.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3140 2.7912 0.7084
[INFO] i: 26 mission_id: 2303 rul_hat: 12.10 flight_time: 0.03 distance: 5.76 R0: 0.31399 Q: 2.79 Req: 0.70836
[INFO] mission number: 26, sample number: 12, trajectory id <31> with path_time: 10.84 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3219 7.0124 0.8261
[INFO] i: 26 mission_id: 2304 rul_hat: 12.10 flight_time: 0.04 distance: 5.52 R0: 0.32193 Q: 7.01 Req: 0.82605
[INFO] mission number: 26, sample number: 13, trajectory id <25> with path_time: 11.53 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3145 2.3042 0.7391
[INFO] i: 26 mission_id: 2305 rul_hat: 12.10 flight_time: 0.03 distance: 5.87 R0: 0.31452 Q: 2.30 Req: 0.73908
[INFO] mission number: 26, sample number: 14, trajectory id <31> with path_time: 10.84 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2768 0.3039 0.7440
[INFO] i: 26 mission_id: 2306 rul_hat: 12.10 flight_time: 0.04 distance: 5.51 R0: 0.27683 Q: 0.30 Req: 0.74396
[INFO] mission number: 26, sample number: 15, trajectory id <21> with path_time: 10.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2904 3.4076 0.7823
[INFO] i: 26 mission_id: 2307 rul_hat: 12.10 flight_time: 0.03 distance: 5.76 R0: 0.29040 Q: 3.41 Req: 0.78230
[INFO] mission number: 26, sample number: 16, trajectory id <25> with path_time: 11.53 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2706 2.3604 0.7503
[INFO] i: 26 mission_id: 2308 rul_hat: 12.10 flight_time: 0.04 distance: 5.81 R0: 0.27063 Q: 2.36 Req: 0.75034
[INFO] mission number: 26, sample number: 17, trajectory id <25> with path_time: 11.53 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3049 3.4411 0.7628
[INFO] i: 26 mission_id: 2309 rul_hat: 12.10 flight_time: 0.04 distance: 5.85 R0: 0.30492 Q: 3.44 Req: 0.76284
```

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[INFO] mission number: 26, sample number: 18, trajectory id <31> with path_time: 10.84 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2768 1.5712 0.7331
[INFO] i: 26 mission_id: 2310 rul_hat: 12.10 flight_time: 0.03 distance: 5.50 R0: 0.27682 Q: 1.57 Req: 0.73309
[INFO] mission number: 26, sample number: 19, trajectory id <21> with path_time: 10.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2975 2.1948 0.7782
[INFO] i: 26 mission_id: 2311 rul_hat: 12.10 flight_time: 0.03 distance: 5.82 R0: 0.29755 Q: 2.19 Req: 0.77822
[INFO] mission number: 26, sample number: 20, trajectory id <18> with path_time: 11.78 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2858 3.0388 0.7137
[INFO] i: 26 mission_id: 2312 rul_hat: 12.10 flight_time: 0.03 distance: 5.80 R0: 0.28579 Q: 3.04 Req: 0.71371
[INFO] mission number: 26, sample number: 21, trajectory id <18> with path_time: 11.78 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2807 1.5971 0.7639
[INFO] i: 26 mission_id: 2313 rul_hat: 12.10 flight_time: 0.03 distance: 5.19 R0: 0.28072 Q: 1.60 Req: 0.76393
[INFO] mission number: 26, sample number: 22, trajectory id <21> with path_time: 10.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2918 4.6723 0.8013
[INFO] i: 26 mission_id: 2314 rul_hat: 12.10 flight_time: 0.03 distance: 5.83 R0: 0.29176 Q: 4.67 Req: 0.80131
[INFO] mission number: 26, sample number: 23, trajectory id <21> with path_time: 10.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2871 1.7320 0.7451
[INFO] i: 26 mission_id: 2315 rul_hat: 12.10 flight_time: 0.03 distance: 5.84 R0: 0.28706 Q: 1.73 Req: 0.74514
[INFO] mission number: 26, sample number: 24, trajectory id <31> with path_time: 10.84 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2974 1.3401 0.6968
[INFO] i: 26 mission_id: 2316 rul_hat: 12.10 flight_time: 0.04 distance: 5.53 R0: 0.29742 Q: 1.34 Req: 0.69685
[INFO] mission number: 26, sample number: 25, trajectory id <21> with path_time: 10.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.2735 4.4542 0.7530
[INFO] i: 26 mission_id: 2317 rul_hat: 12.10 flight_time: 0.03 distance: 5.29 R0: 0.27345 Q: 4.45 Req: 0.75298
Elapsed time is 95.507855 seconds.
[INFO] mission number: 27, sample number: 1, trajectory id <26> with path_time: 10.22 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3876 3.4653 0.8311
[INFO] i: 27 mission_id: 2318 rul_hat: 11.44 flight_time: 0.04 distance: 5.99 R0: 0.38756 Q: 3.47 Req: 0.83112
[INFO] mission number: 27, sample number: 2, trajectory id <31> with path_time: 10.84 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3484 1.8205 0.8701
[INFO] i: 27 mission_id: 2319 rul_hat: 11.44 flight_time: 0.03 distance: 5.82 R0: 0.34840 Q: 1.82 Req: 0.87013
[INFO] mission number: 27, sample number: 3, trajectory id <21> with path_time: 10.59 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3593 2.7267 0.8503
[INFO] i: 27 mission_id: 2320 rul_hat: 11.44 flight_time: 0.03 distance: 5.86 R0: 0.35932 Q: 2.73 Req: 0.85031
[INFO] mission number: 27, sample number: 4, trajectory id <35> with path_time: 9.49 that meets constraint: path_tim
Bumping sigmax
Bumping sigmax
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[INFO] degradation parameters: 0.3521 5.0357 0.8764
[INFO] i: 27 mission_id: 2321 rul_hat: 11.44 flight_time: 0.03 distance: 5.88 R0: 0.35214 Q: 5.04 Req: 0.87638
[INFO] mission number: 27, sample number: 5, trajectory id <21> with path_time: 10.59 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3925 6.9247 0.8783
[INFO] i: 27 mission_id: 2322 rul_hat: 11.44 flight_time: 0.03 distance: 5.94 R0: 0.39252 Q: 6.92 Req: 0.87833
[INFO] mission number: 27, sample number: 6, trajectory id <26> with path_time: 10.22 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3658 6.5767 0.8084
[INFO] i: 27 mission_id: 2323 rul_hat: 11.44 flight_time: 0.03 distance: 5.83 R0: 0.36575 Q: 6.58 Req: 0.80840
[INFO] mission number: 27, sample number: 7, trajectory id <35> with path_time: 9.49 that meets constraint: path_tim
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3555 2.8950 0.8689
[INFO] i: 27 mission_id: 2324 rul_hat: 11.44 flight_time: 0.03 distance: 5.81 R0: 0.35549 Q: 2.89 Req: 0.86887
[INFO] mission number: 27, sample number: 8, trajectory id <21> with path_time: 10.59 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3681 1.8593 0.8592
[INFO] i: 27 mission_id: 2325 rul_hat: 11.44 flight_time: 0.03 distance: 5.99 R0: 0.36807 Q: 1.86 Req: 0.85921
[INFO] mission number: 27, sample number: 9, trajectory id <35> with path_time: 9.49 that meets constraint: path_tim
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3544 0.9847 0.8205
[INFO] i: 27 mission_id: 2326 rul_hat: 11.44 flight_time: 0.03 distance: 5.87 R0: 0.35436 Q: 0.98 Req: 0.82051
[INFO] mission number: 27, sample number: 10, trajectory id <21> with path_time: 10.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3826 4.1269 0.8455
[INFO] i: 27 mission_id: 2327 rul_hat: 11.44 flight_time: 0.03 distance: 5.80 R0: 0.38258 Q: 4.13 Req: 0.84553
[INFO] mission number: 27, sample number: 11, trajectory id <21> with path_time: 10.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3710 2.2422 0.8436
[INFO] i: 27 mission_id: 2328 rul_hat: 11.44 flight_time: 0.03 distance: 5.85 R0: 0.37104 Q: 2.24 Req: 0.84364
[INFO] mission number: 27, sample number: 12, trajectory id <26> with path_time: 10.22 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3567 3.6303 0.8370
[INFO] i: 27 mission_id: 2329 rul_hat: 11.44 flight_time: 0.03 distance: 5.81 R0: 0.35673 Q: 3.63 Req: 0.83696
[INFO] mission number: 27, sample number: 13, trajectory id <31> with path_time: 10.84 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3571 4.9394 0.8822
[INFO] i: 27 mission_id: 2330 rul_hat: 11.44 flight_time: 0.03 distance: 5.90 R0: 0.35714 Q: 4.94 Req: 0.88220
[INFO] mission number: 27, sample number: 14, trajectory id <21> with path_time: 10.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3920 5.8847 0.8215
[INFO] i: 27 mission_id: 2331 rul_hat: 11.44 flight_time: 0.03 distance: 6.01 R0: 0.39205 Q: 5.88 Req: 0.82150
[INFO] mission number: 27, sample number: 15, trajectory id <26> with path_time: 10.22 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3660 2.0069 0.8644
[INFO] i: 27 mission_id: 2332 rul_hat: 11.44 flight_time: 0.04 distance: 6.02 R0: 0.36598 Q: 2.01 Req: 0.86442
[INFO] mission number: 27, sample number: 16, trajectory id <26> with path_time: 10.22 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3612 6.6172 0.8653
[INFO] i: 27 mission_id: 2333 rul_hat: 11.44 flight_time: 0.03 distance: 5.89 R0: 0.36124 Q: 6.62 Req: 0.86531
[INFO] mission number: 27, sample number: 17, trajectory id <35> with path_time: 9.49 that meets constraint: path_ti
```

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Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.4252 0.6336 0.8675
[INFO] i: 27 mission_id: 2334 rul_hat: 11.44 flight_time: 0.03 distance: 5.82 R0: 0.42519 Q: 0.63 Req: 0.86755
[INFO] mission number: 27, sample number: 18, trajectory id <35> with path_time: 9.49 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3597 3.8417 0.8540
[INFO] i: 27 mission_id: 2335 rul_hat: 11.44 flight_time: 0.03 distance: 5.84 R0: 0.35968 Q: 3.84 Req: 0.85403
[INFO] mission number: 27, sample number: 19, trajectory id <21> with path_time: 10.59 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3848 0.3602 0.8524
[INFO] i: 27 mission_id: 2336 rul_hat: 11.44 flight_time: 0.03 distance: 5.96 R0: 0.38484 Q: 0.36 Req: 0.85236
[INFO] mission number: 27, sample number: 20, trajectory id <26> with path_time: 10.22 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3802 3.4344 0.8581
[INFO] i: 27 mission_id: 2337 rul_hat: 11.44 flight_time: 0.03 distance: 5.82 R0: 0.38020 Q: 3.43 Req: 0.85806
[INFO] mission number: 27, sample number: 21, trajectory id <35> with path_time: 9.49 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3835 4.7130 0.8293
[INFO] i: 27 mission_id: 2338 rul_hat: 11.44 flight_time: 0.03 distance: 5.85 R0: 0.38346 Q: 4.71 Req: 0.82935
[INFO] mission number: 27, sample number: 22, trajectory id <26> with path_time: 10.22 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3751 6.1170 0.8656
[INFO] i: 27 mission_id: 2339 rul_hat: 11.44 flight_time: 0.03 distance: 5.93 R0: 0.37508 Q: 6.12 Req: 0.86565
[INFO] mission number: 27, sample number: 23, trajectory id <26> with path_time: 10.22 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3664 2.8072 0.8211
[INFO] i: 27 mission_id: 2340 rul_hat: 11.44 flight_time: 0.03 distance: 5.79 R0: 0.36640 Q: 2.81 Req: 0.82109
[INFO] mission number: 27, sample number: 24, trajectory id <26> with path_time: 10.22 that meets constraint: path_t
Bumping sigmax
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3536 2.7747 0.8601
[INFO] i: 27 mission_id: 2341 rul_hat: 11.44 flight_time: 0.04 distance: 5.91 R0: 0.35356 Q: 2.77 Req: 0.86009
[INFO] mission number: 27, sample number: 25, trajectory id <35> with path_time: 9.49 that meets constraint: path_ti
Bumping sigmax
Bumping sigmax
[INFO] degradation parameters: 0.3662 2.4950 0.9284
[INFO] i: 27 mission_id: 2342 rul_hat: 11.44 flight_time: 0.03 distance: 5.87 R0: 0.36615 Q: 2.50 Req: 0.92844
Elapsed time is 94.781170 seconds.
```

End of experiment

```
y = avg_pos_err_dist;

x = 1:8;
f1 = figure; clf;
hold on

cb1 = y(:,1)+2*y(:,2);
cb1 = cb1';
```

```
cb2 = y(:,1)-2*y(:,2);
cb2 = cb2';

x2 = [x, fliplr(x)];
inbetween = [cb1, fliplr(cb2)];
fill(x2, inbetween, 'g');
plot(x, cb1, 'g')
plot(x, cb2, 'g')
plot(x, y(:,1), 'm')

hold off
```