```
function [Intersect] = estimation2(ballPosition,h_estim, t_arr)
```

Ball Trajectory estimation

Altered version of the Matlab script developped by the JuRP-HK group. Current method: catching at a predefined height.

```
N_sample = length(ballPosition(:,1));

t_arr = t_arr(2:N_sample);
                                    % Number of buffered samples
TsBall = median(t_arr);             % Motion capture camera sample
 time


vx = zeros(1, N_sample-1);
vy = zeros(1, N_sample-1);
vz = zeros(1, N_sample-1);

for i = 2:N_sample
    vx(i-1) = (ballPosition(i,1)-ballPosition(i-1,1))*(1/TsBall);
    vy(i-1) = (ballPosition(i,2)-ballPosition(i-1,2))*(1/TsBall);
    vz(i-1) = TsBall*(i-1)*9.81+(ballPosition(i,3)-
ballPosition(i-1,3))*(1/TsBall);
end

v_median_x = median(vx);
v_median_y = median(vy);
v_median_z = median(vz);

g = -9.81;
```

```
Not enough input arguments.

Error in estimation2 (line 8)
N_sample = length(ballPosition(:,1));
```

Calculate trajectory and cup angle

```
%Trajectory
z_delta = h_estim - ballPosition(1,3);
t = real(max(roots([1 2/g*v_median_z -(2/g)*z_delta])));
Intersect(1,1) = v_median_x * t+ ballPosition(1,1);
Intersect(1,2) = v_median_y * t+ ballPosition(1,2);
Intersect(1,3) = h_estim;

end
```

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