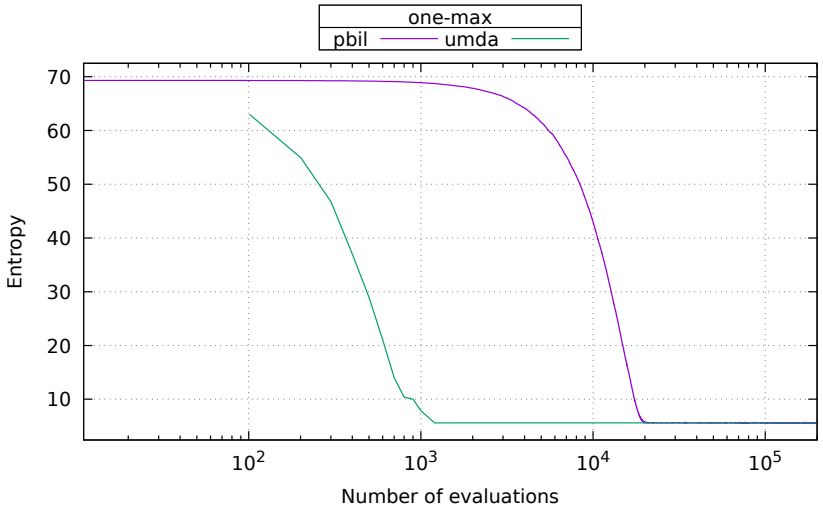
HNCO
Evolution of entropy
in PBIL and UMDA

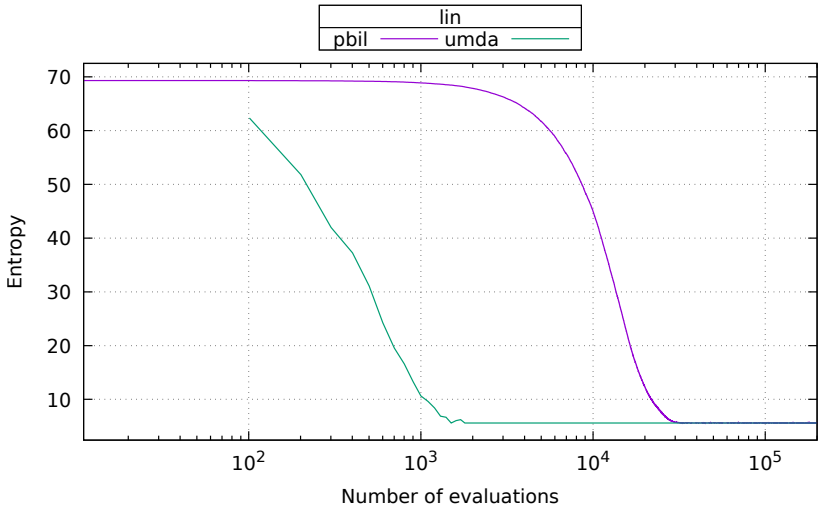
May 18, 2020

Contents

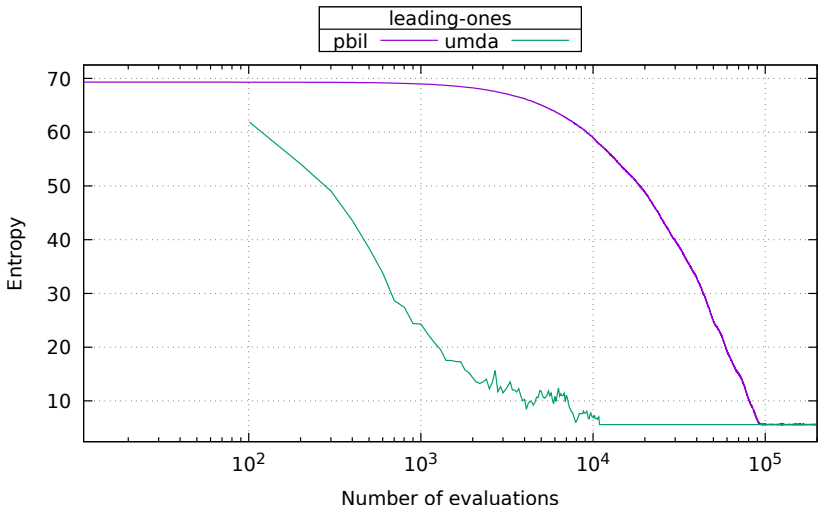
1 one-max



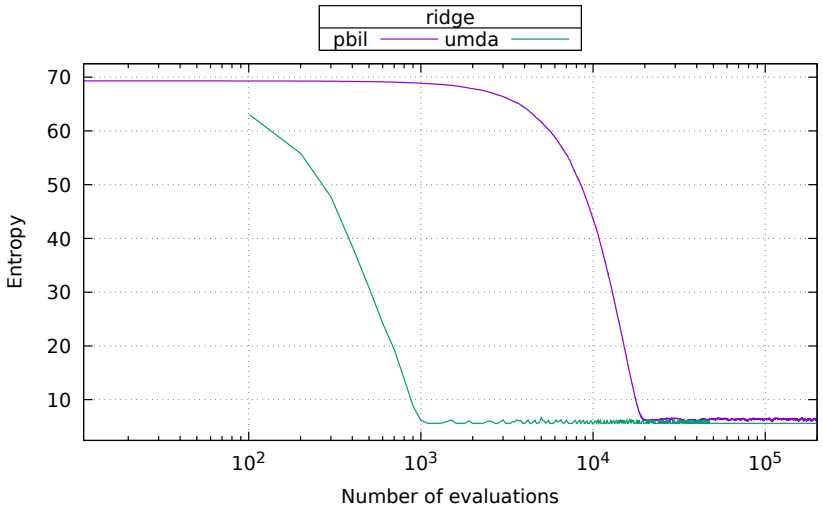
2 lin



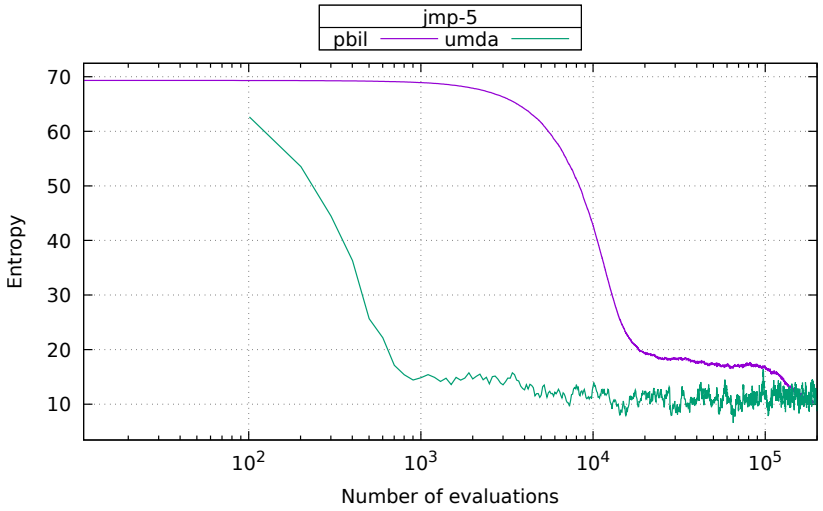
3 leading-ones



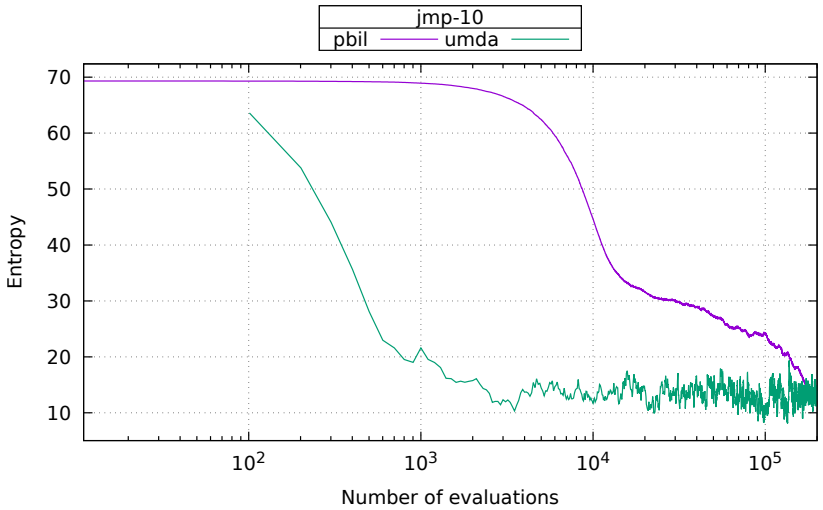
4 ridge



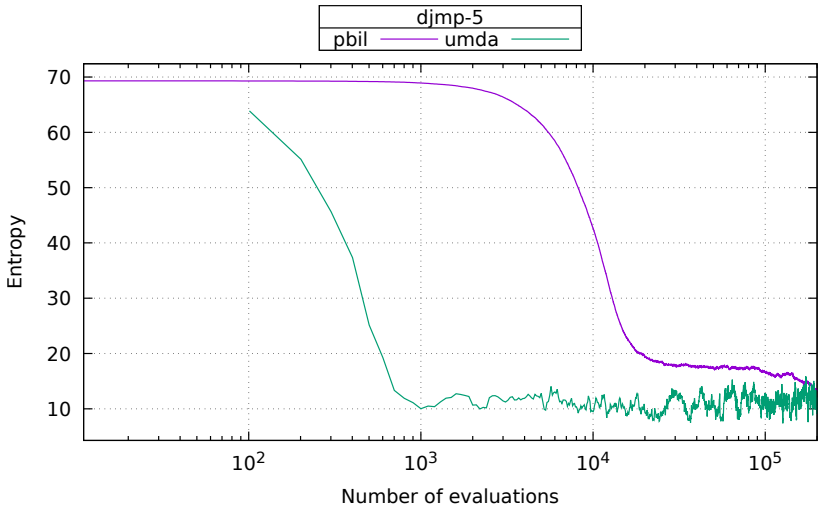
5 jmp-5



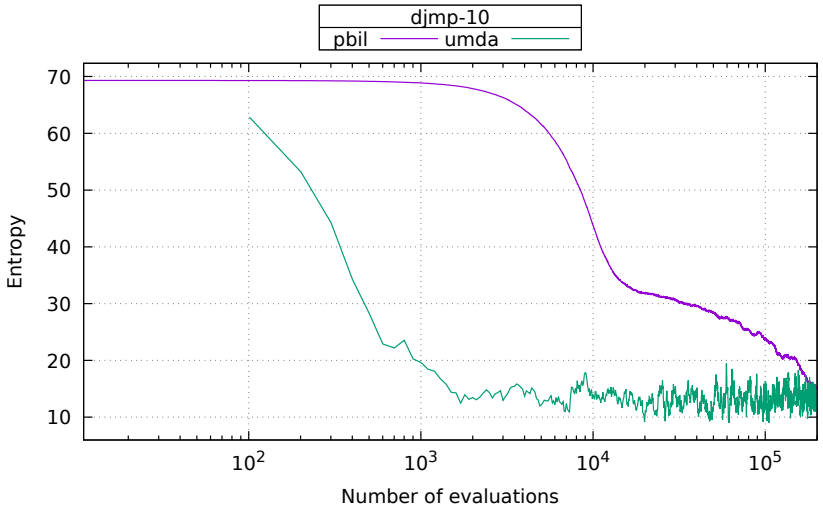
6 jmp-10



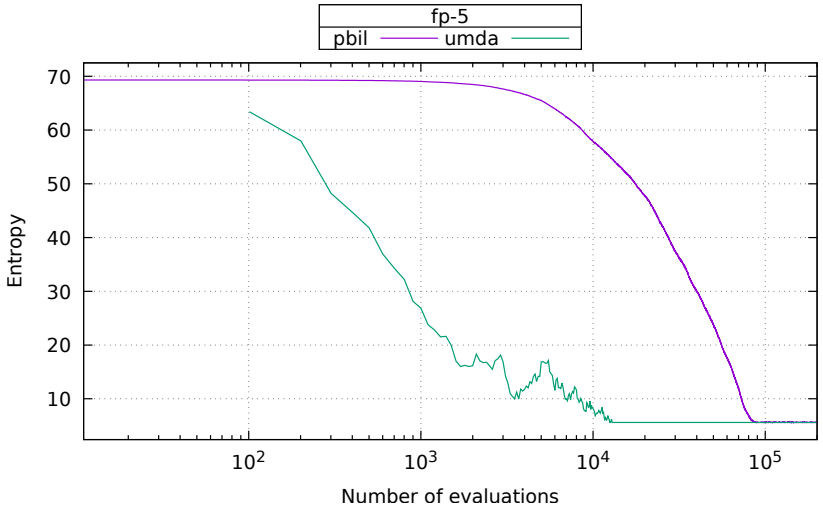
7 djmp-5



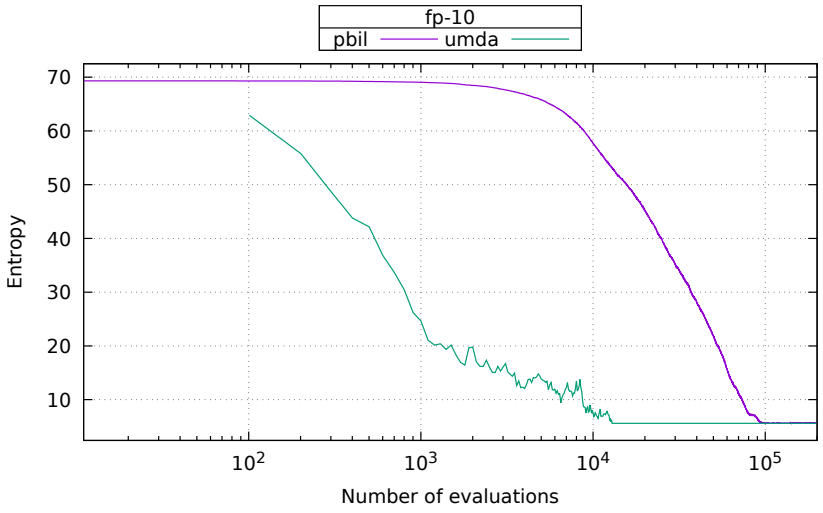
8 djmp-10



9 fp-5



10 fp-10



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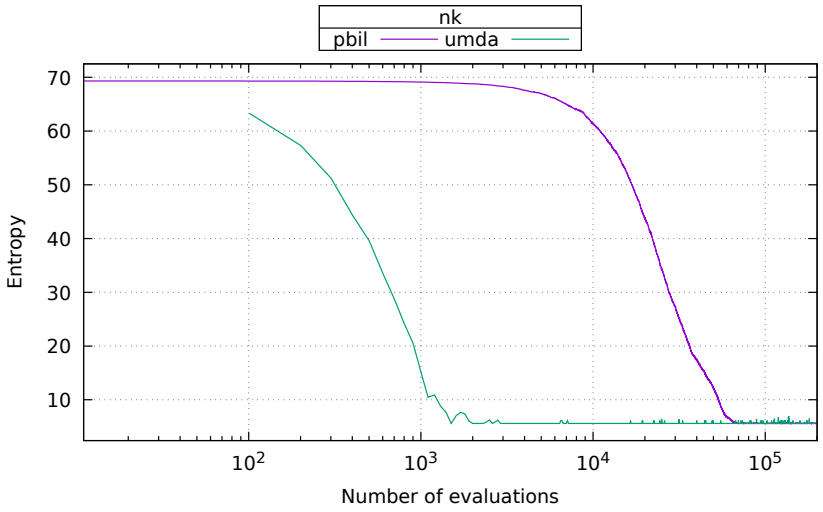
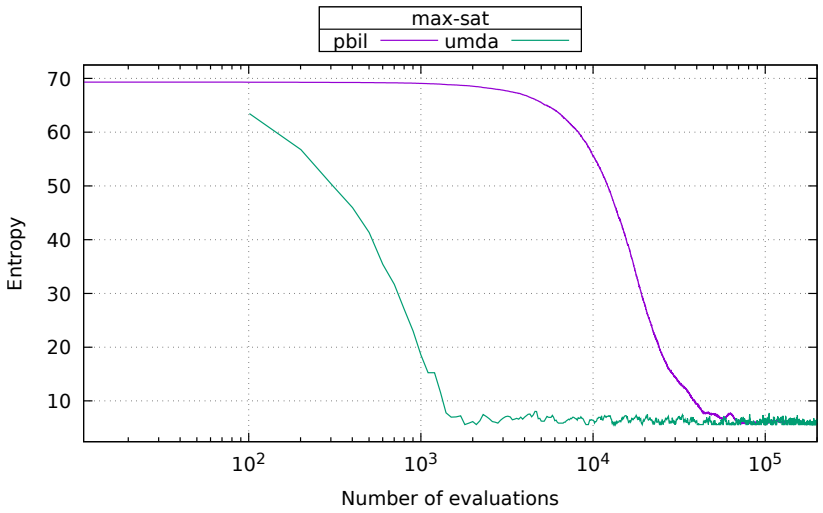
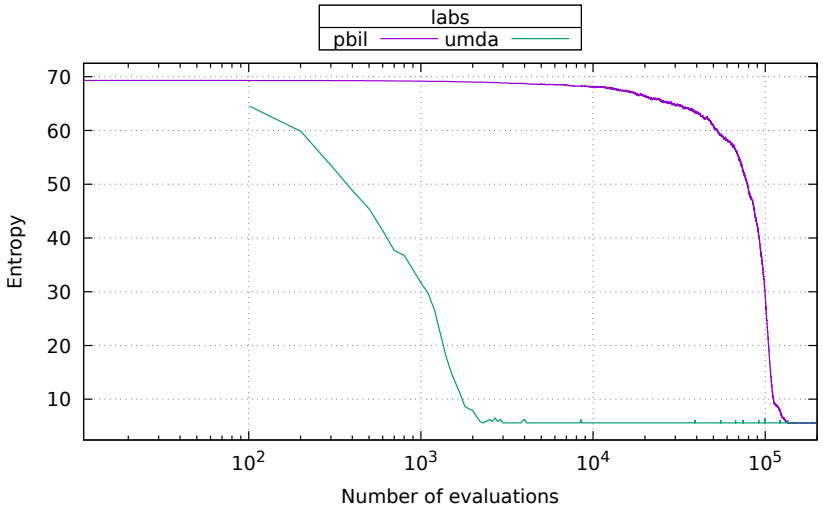


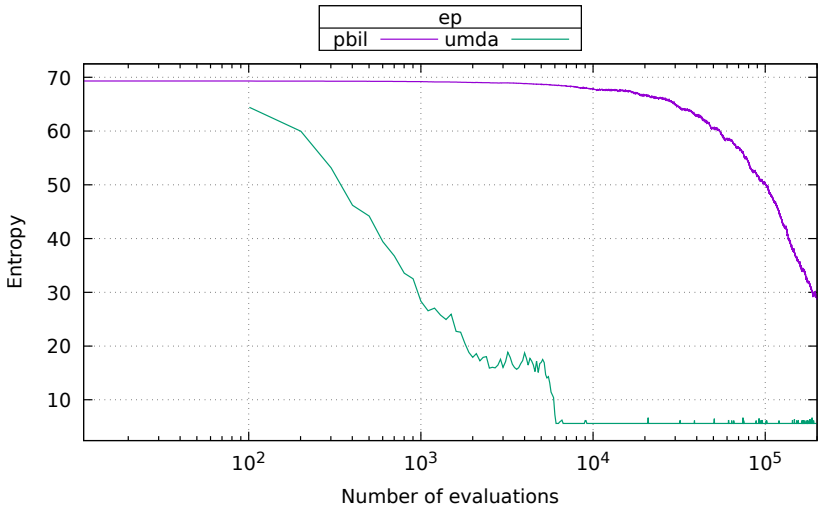
12 max-sat



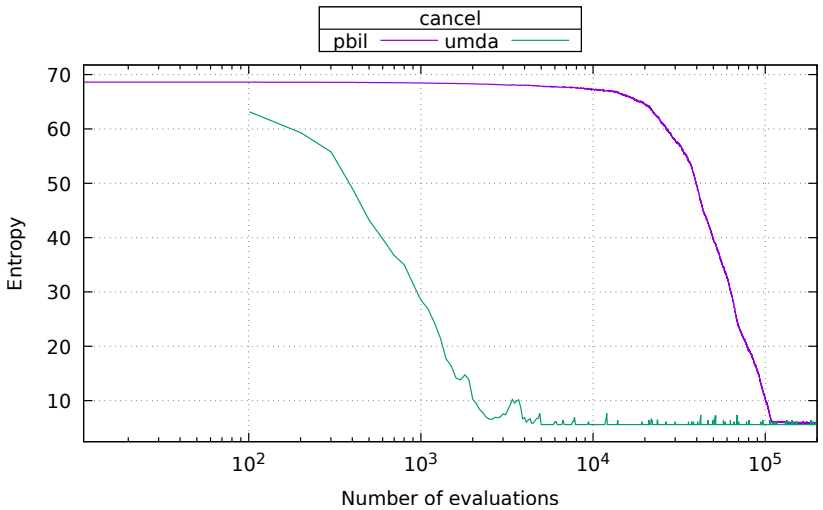
13 labs



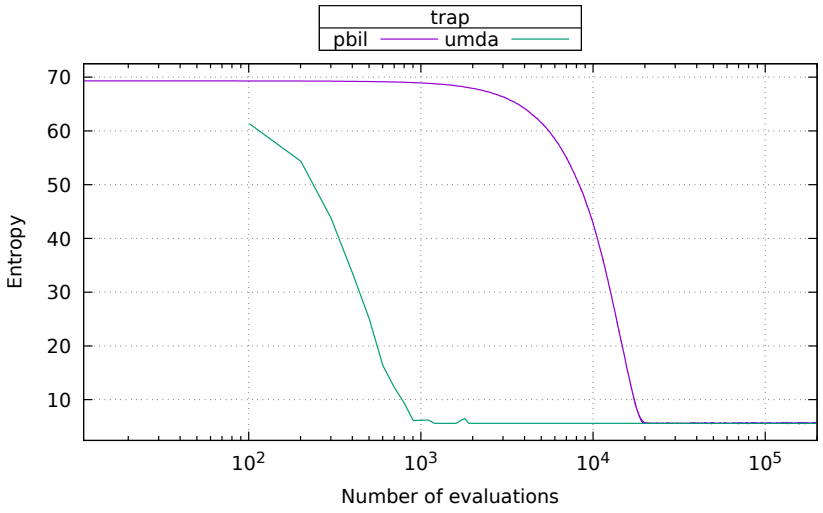
14 ep



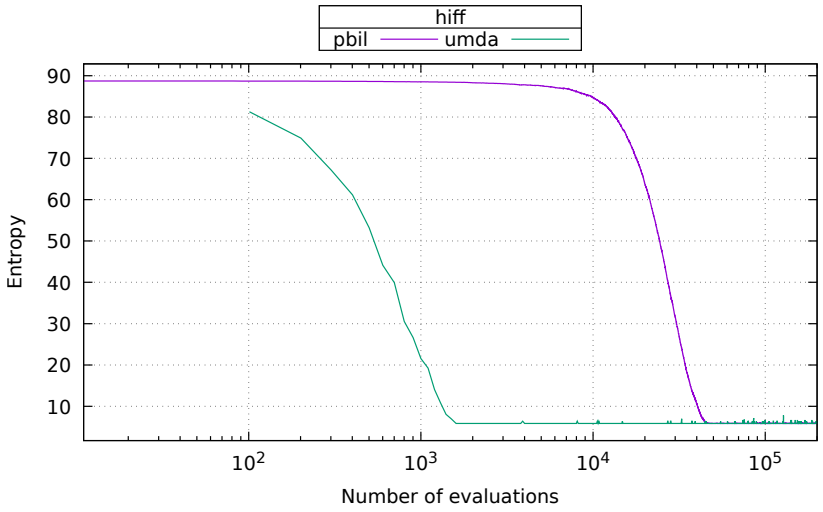
15 cancel



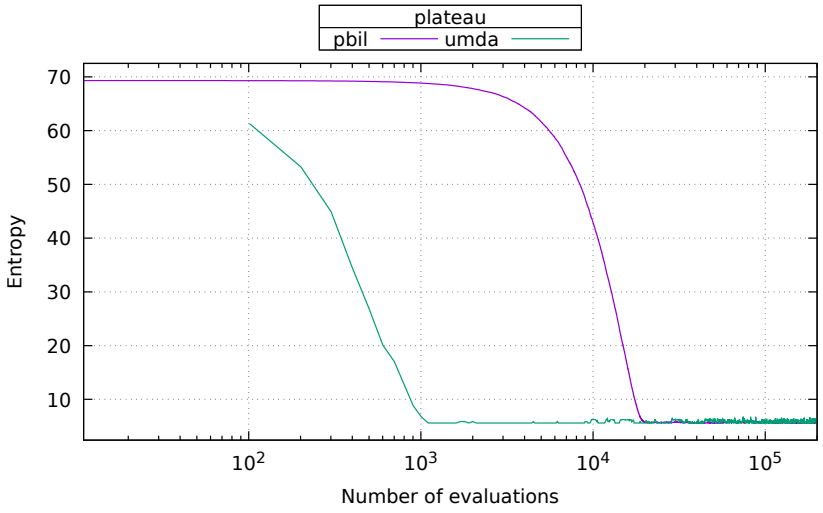
16 trap



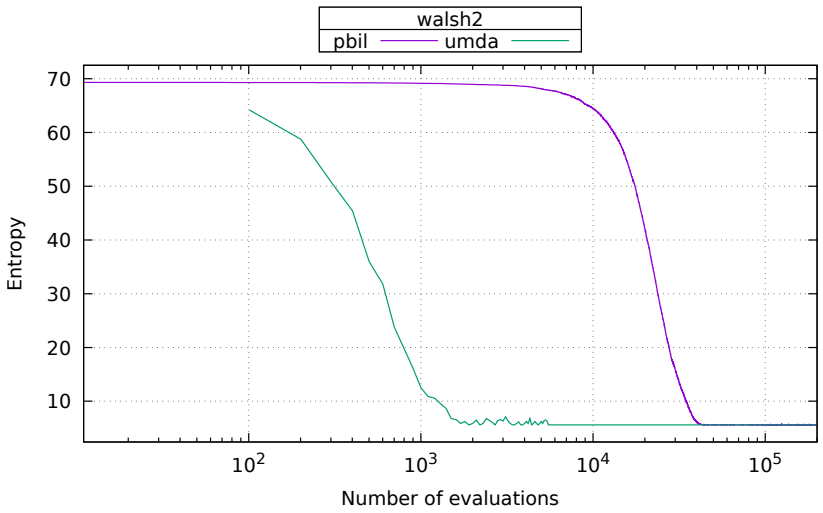
17 hiff



18 plateau



19 walsh2



A Plan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{
    "exec": "hnco",
    "opt": "--map 1 --map-random -s 100 -b 200001 --pv-log-entropy",
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    "results": "results",
    "graphics": "graphics",
    "report": "report",
    "xlabel": "Number of evaluations",
    "xcolumn": 1,
    "xlogscale": true,
    "ylabel": "Entropy",
    "ycolumn": 2,
    "ylogscale": false,
    "functions": [
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            "opt": "-F 0"
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            "opt": "-F 1 -p instances/lin.100"
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        {
            "id": "leading-ones",
            "opt": "-F 10"
        },
        {
            "id": "ridge",
            "opt": "-F 11"
        },
        {
            "id": "jmp-5",
            "opt": "-F 30 -t 5"
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        {
            "id": "jmp-10",
            "opt": "-F 30 -t 10"
        },
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```

```
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        {
            "id": "fp-5",
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            "opt": "-F 70 -p instances/ms.100.3.1000"
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        {
            "id": "labs",
            "opt": "-F 81"
        },
        {
            "id": "ep",
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        {
            "id": "cancel",
            "opt": "-F 100 -s 99"
        },
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            "opt": "-F 110 --fn-num-traps 10"
        },
        {
            "id": "hiff",
            "opt": "-F 120 -s 128"
        },
        {
            "id": "plateau",
            "opt": "-F 130"
        },
        {
            "id": "walsh2",
            "opt": "-F 162 -p instances/walsh2.100"
        }
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    "algorithms": [
        {
            "id": "pbil",
            "opt": "-A 500 -x 10 -y 1 -r 5e-3"
        },
        {
            "id": "umda",
            "opt": "-A 600 -x 100 -y 10"
        }
    ]
}
```

B Default parameters

```
# algorithm = 100
# bm_mc_reset_strategy = 1
# bm_num_gs_cycles = 1
# bm_num_gs_steps = 100
# bm_sampling = 1
# budget = 10000
# bv_size = 100
# description_path = description.txt
# ea_lambda = 100
# ea_mu = 10
# expression = x
# fn_name = noname
# fn_num_traps = 10
# fn_prefix_length = 2
# fn_threshold = 10
# function = 0
# ga_crossover_bias = 0.5
# ga_crossover_probability = 0.5
# ga_tournament_size = 10
# hea_bit_herding = 0
# hea_num_seq_updates = 100
# hea_reset_period = 0
# hea_sampling_method = 0
# hea_weight = 1
# learning_rate = 0.001
# map = 0
# map_input_size = 100
# map_path = map.txt
# map_ts_length = 10
# map_ts_sampling_mode = 0
# mutation_probability = 1
# neighborhood = 0
# neighborhood_iterator = 0
# noise_stddev = 1
# num_iterations = 0
# num_threads = 1
# path = function.txt
# pn_mutation_probability = 1
# pn_neighborhood = 0
# pn_radius = 2
# population_size = 10
# pv_log_num_components = 5
# radius = 2
# real_expression = (1-x)^2+100*(y-x^2)^2
# real_lower_bound = -2
# real_num_bits = 8
# real_upper_bound = 2
# results_path = results.json
# rls_patience = 50
# sa_beta_ratio = 1.2
# sa_initial_acceptance_probability = 0.6
# sa_num_transitions = 50
# sa_num_trials = 100
# seed = 0
# selection_size = 1
# solution_path = solution.txt
# target = 100
# print_defaults
# last_parameter
# exec_name = hnco
# version = 0.14
```

```
# Generated from hnco.json
```