

20 Schwefel  $x \cdot \sin(x)$

```
bbob f20, 3-D
51 targets: 100..1e-08
5, 15 instances
```

best 2009

no cumula

```
> stepsize cu
```

## 7 covariance

no cumula

CMA-ES-20

both cumu

> both cumu

stepsize cu

both cumu

- both cumulative

stepsize c

◀ covariance

## 1st size cu

v2.6.1.158

## Fraction of function, target pairs

 $\log_{10}(\# \text{ f-evals} / \text{dimension})$