

Evolutionary Algorithms: Real-Parameter Evolutionary Algorithms

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<http://cw.felk.cvut.cz/doku.php/courses/a4m33bia/start>

$(\mu + \lambda)$ - and (μ, λ) - Multimembered EAs

Motivation to extend $(\mu + 1)$ -ES to $(\mu + \lambda)$ - and (μ, λ) -ES:

- To enable **self-adaptation** of strategic parameters standard deviations.
The σ^t parameters are considered a part of the individual's genome that is subject to recombination and mutation.
Those individuals with better adjusted strategy parameters are expected to perform better.
- To make use of **parallel computers**, where several newly generated individuals can be processed (evaluated) simultaneously.

(μ, λ) -EA

Model:

- μ parents produce λ offspring.
- Forgetting principle – only the offspring undergo selection; the lifetime of every individual is limited to one generation.

Remarks:

- Possible short phases of recession.
- It avoids long stagnation phases due to misadapted strategy parameters.

