Analysis process

1) Profile with MAQAO LProf
2) Identify hotspots
   - Function names
   - Loop ids
3) Analyse hotspots with CQA
   - Functions body
   - Loops by functions
   - Loops by identifiers as returned by LProf

Profile with MAQAO LProf

- Sequential / OpenMP profiling

```
$ maqao lprof  [xp=exp_dir] -- ./my_app arg1 arg2 …
```

If *exp_dir* is omitted, an experiment directory *maqao_<timestamp>* will be created.

- MPI / hybrid profiling

```
$ mpirun –n 32 maqao lprof  [xp=exp_dir] -- ./my_app arg1 arg2 …
```

Display Lprof results

- For functions (text output)

```
$ maqao lprof -df xp=exp_dir
```

- For loops (text output)

```
$ maqao lprof -dl xp=exp_dir
```

- Create HTML summary

```
$ maqao lprof xp=exp_dir of=html
```

Analysis with CQA

- Analysing a given loop or set of loops

```
$ maqao cqa ./my_app loop=id1,id2,id3…
```

id1, *id2*, *id3* … are the numerical loop identifiers returned by **lprof**.

- Analysing all innermost loops in a given function or set of functions

```
$ maqao cqa ./my_app fct-loops="regexp"
```

- Analysing the body of a given function or set of functions

```
$ maqao cqa ./my_app fct-body="regexp"
```

regexp is a regular expression: *foo* matches "foo1", "foo" or "afoo", while *^bar$* matches "bar" only