



The power of the **Quad-Core** processor in speeding-up **High Energy Physics** analysis is demonstrated with **PROOF**, a parallel data processing system available with **ROOT** [1]. **PROOF** is used by the **ALICE** experiment [2] to prepare the analysis of the LHC data expected from 2007 on.

For this demo, an example analysis is repeated *ad infinitum* on three different dual-socket machines equipped with **quad-core** (top panel), **dual-core** (middle) and **single-core** processors (bottom). The analysis consists in processing about 4 GB of simulated data in search for Λ^0 particle candidates, showing up as a peak in the invariant mass distribution of proton and π candidates (histograms on the left).

The **instantaneous** event and MByte **processing rates** (speed-o-meters on the right) make clear the advantage of having more CPU power (the yellow / green indicators show the current average / maximum reached). The average event rate divided by the clock speed and by the number of CPU sockets (*normalized rate*) scales nearly with the number of cores, indicating that **the available computing power is fully exploited**.