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The Run-by-Run Monte Carlo simulation for the ANTARES experiment

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The data acquisition conditions in a marine environment are not stable and constant in time. Some biological and physical phenomena follow a seasonal evolution producing a periodical change of the rates registered in a neutrino telescope. Also variations in the sea current velocity affects the measured baseline value and the burst fraction on short time scales.

Monte Carlo simulations of the detector response to the passage of charged particles in proximity of the telescope should reproduce the conditions of the medium and of the acquisition setup as reliably as possible. An efficient way to account for the variations of the optical background to the Cherenkov light due to physics signals is to extract related information directly from the data runs. A Run-by-Run procedure has been developed to follow the time evolution of data acquisition. A description of the methodology will be given in the talk, together with some examples of the agreement between data and Monte Carlo expectations.

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