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Advantages and needs in time resolving tracker for astro-particle experiments in space

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Since the 90's almost every astro-particle experiment operating in space included a tracker.
The requirements in terms of spatial resolution depend on the type of tracker: 10 μm or less for a spectrometric detector and 30-40 μm or even more for a gamma-ray tracker-converter or for a calorimetric experiment. With a total available powers of few hundreds of Watts and tens of m^2 of areas to be covered, another important requirement is the power consumption: each channel must require at the level of 1 mW or even more.
Current development in silicon detectors, such as LGAD, permit to include also temporal capability with resolution of tens of ps. At the same time the current technology in the front-end electronics would allow to read-out this kind of detectors with few mW per channel
In this contribution the advantages of a time resolving tracker in a typical astro-particle detector will be reviewed and a preliminary evaluation, based on a custom MC simulation, of the needed time resolution will be presented.

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