

MK simulation of electromagnetic calorimeter work in GEANT4

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MK simulation of electromagnetic calorimeter by means GEANT4 is carried out for soft photon registration in pp and pA interactions. The studying of excess of such photon yield is planned to fulfill at U-70 accelerator of IHEP, Protvino, Russia.

Alignment Task at data processing

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The important task of any experimental project at the reconstruction procedure is the alignment. It is necessary to provide the correcting geometry of setup for reconstruction of tracks in space and the finding of their characteristics. For these purposes the programme packet based on ideas of Millepede packet have been designed. The linear and nonlinear parameters of alignment can be found through few iteration.

On electromagnetic interaction of Majorana fermions

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We evaluate the interaction of Majorana fermion (e.g. WIMP) with ordinary nucleus by electromagnetic field. It may be interesting for the search of dark matter particles.

Controlled collision of two pulsed laser beams in nonlinear media

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We present the study of interplay between pulsed beams in nonlinear media. Particular attention is paid to the effect of total reflection of signal from the reference. Cascade three-wave interactions at a large phase mismatch create the cross-modulation of signal refractive index. We give the results of numerical