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Elegant (ELastic Event GENeraTor)

Elegant (Elastic Event GENeraTor) is a Monte-Carlo generator of (anti-)proton-proton elastic collisions, based on a number of theoretical/phenomenological models.

Up to CMSSW verion 4.2.4, Elegant was developped within the TOTEM offline software. This old version is described here. Since CMSSW version 6.2.0, Elegant became a standalone project, see its web page [↗](#). Although it has forked off, it can still be seamlessly used in TOTEM offline software - see the [IOMC/Elegant](#) module.

The recommended usage of ElegantSource

As for every energy there is one preferred/default ROOT file with CDFs, the `ElegantSource_cfi.py` includes function `ElegantDefaultFileName(energy)` which returns the default filename for the given energy (string parameter). Hence a recommended usage is as follows

```
energy = "3500"
...
import IOMC.Elegant.ElegantSource_cfi
process.generator = IOMC.Elegant.ElegantSource_cfi.generator
process.generator.fileName = IOMC.Elegant.ElegantSource_cfi.ElegantDefaultFileName(energy)
process.generator.verbosity = ...
...
```

Physics models

The physics model can be set by

```
process.generator.model = cms.string('<your choice here>')
```

The list of available models can be retrieved by calling

```
ElegantTDistributionSampler -model-list
```

Further information is available in [Elegant documentation](#) [↗](#).

-- JanKaspar - 19-Sep-2013

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