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Elegent (ELastic Event GENeraTor)

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

**The recommended usage of ElegentSource**

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

```python
energy = "3500"
...
import IOMC.Elegent.ElegentSource_cfi
process.generator = IOMC.Elegent.ElegentSource_cfi.generator
process.generator.fileName = IOMC.Elegent.ElegentSource_cfi.ElegentDefaultFileName(energy)
process.generator.verbosity = ...
...
```

**Physics models**

The physics model can be set by

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

The list of available models can be retrieved by calling

```bash
ElegentTDistributionSampler -model-list
```

Further information is available in Elegent documentation [here](#).

-- JanKaspar - 19-Sep-2013