Physics models for electron interactions in DNA bases

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Goals

Implementation of electron physics models in DNA bases following the same procedure as in CPA100 code but

- ✓ for unbounded molecules,
- ✓ with more recent data,
- ✓ over a large energy range (-> 1 MeV).

Conclusions and Next stages

- Direct determination of electron cross sections in DNA bases (adenine, aytosine, guanine, thymine) between 11eV and 1 MeV
- Implementation of physics models (elastic, electronic excitation and ionisation) for 4 DNA bases in Geant4-DNA
- Verification of this implementation by the calculation of different physical quantities
  - range
  - stopping power
  - mean free path
  - …
  - And comparison with available data