



Appunti di Fisica '11 & Dottorato di Ricerca in Fisica

14 aprile ore 15.00
aula E. Majorana, Dipartimento di Fisica

Nuclear Energy: how does it work?

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The possibility to produce energy from nuclear transmutations is a consequence of the Einstein's equation, stating the equivalence between mass and energy.

Fission reactions represent a very powerful energy source, showing a yield 2 millions higher than that of fossil fuels, without greenhouse gases emission.

Nuclear power plants working principles will be illustrated, with particular attention to safety aspects, in operational mode as well as in case of accident. In particular, differences between various generations reactors will be stressed, starting from old RBMK type (Chernobyl) to the newest EPR type. Other correlated aspects, as nuclear waste disposal and non-proliferation of nuclear weapons will be considered.

Finally, due to recent event regarding Fukushima nuclear accident, an overview of the actual nuclear risk and its consequences worldwide will be given.