

Fusion, an important option for our future energy supply

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Abstract

The talk will introduce the subject with a discussion on the dependency on the current role of fossil fuels in the worldwide energy production. Massive use of fossil fuels is both unsustainable and dangerous for several compelling reasons. Massive combustion of fossil fuels is altering our atmosphere, with consequences for pollution and climate and much better use could be made from our fossil resources. Moreover, fossil fuel reserves are finite, implying an eventual depletion that necessitates a proactive transition toward sustainable and clean alternatives. Looking at the projection of both present power consumption and projections for future energy demands worldwide we find a huge gap if fossil fuels are left out and thus a new energy source is needed. An important option is nuclear fusion with its unique characteristics: safe, abundant, and it has an excellent compatibility with our environment.

In a second part, the talk will explain the basic principles of nuclear fusion, the different implementations, and the status of fusion research. An introduction to the large next step reactor ITER will be presented.