

Problems and Perspectives of Thermonuclear Synthesis

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Fusion energy research aims to develop an environmentally and economically sustainable energy source.

Thermonuclear reactor studies are discussed with reference to tokamak installations. [Great progress in understanding the basic tokamak physics has been made over the last 10 years.](#) It allows to increase the magnetohydrodynamic stability of plasma column and to minimize the cross field transport of plasma energy. A high degree of physical understanding is facilitated by integrated modeling effort. Computer simulations are used both to plan and interpret experiments and to development the models themselves.

Fusion reactor problems and perspectives are discussed with reference to International Thermonuclear Experimental Reactor (ITER) and project DEMO. Problems are identified to which experimental solutions are not available to date, including impurities and disruptions.

ITER research program will be briefly overviewed.