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Double Beta Decay

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Experimental searches for neutrino-less double beta decay ($0\nu\beta\beta$) are one of the most active research topics in neutrino physics. The observation of such process is in fact of major importance since it will prove the Majorana nature of neutrinos and may give access to their absolute mass scale. The Majorana nature of the neutrino would have interesting implication in many extensions of the Standard Model of particle physics. On the other hand, two neutrino double beta decay ($2\nu\beta\beta$) provides needed information for further development of nuclear theory (nuclear matrix elements). During the talk, the subjects of $0\nu\beta\beta$ and $2\nu\beta\beta$ decays, the most important experiments in the field and the obtained results will be introduced.

Presenter: Prof. STEKL, Ivan (Czech Technical University in Prague)