Dynamically assisted nuclear fusion

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We consider the prototypical deuterium-tritium fusion reaction. At intermediate initial kinetic energies (in the keV regime), a major bottle-neck of this reaction is the Coulomb barrier between the nuclei, which is overcome by tunneling. Here, we study whether the tunneling probability can be enhanced by an additional electromagnetic field, such as an x-ray free electron laser (XFEL). We find that this dynamical assistance should be feasible with present-day or near future technology.