

Computational Aspects of Laser Induced Electron Emission from Nanotips

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Laser induced emission from metallic nanotips is currently attracting a lot of attention due to its potential application in, for instance, the probing of ultrafast processes such as intramolecular dynamics. The aim is to trigger electron emission with nanometer, femtosecond and sub-electronvolt precision. As experiments do not provide sufficient insight, numerical simulations have been carried out. The experiment poses various difficulties for the numerical treatment, such as the large range of length and time scales involved and the multiphysics aspect of capturing the electron dynamics in the presence of static as well as ultra-high frequency fields. This talk will address these issues and present suitable numerical techniques for their resolution.