

VII Leopoldo García-Colín Mexican Meeting on Mathematical and Experimental Physics



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CARLOS ACOSTA: Modelling of single nanosecond laser pulse-induced modifications of Silicon surfaces.

Monday, 17 February 2020 19:30 (15 minutes)

Irradiation with a single nanosecond laser pulse in the melting regime can result in a characteristic change in the surface morphology of crystalline silicon. This has been verified experimentally in a variety of situations. In certain irradiation conditions dimple-shaped surface topographies are produced. In this work the dimple height, depth and width are modelled following the approach of Schwarz-Selinger and coworkers, upon varying the laser irradiation parameters like peak energy density, pulse duration and wavelength. This is achieved with numerical simulations of one-dimensional heat flow as input to the analytical fluid-flow equations. This model has been implemented in order to explain some results obtained in nanosecond laser-induced interference grating formation experiments on silicon.

Session Classification: SHORT TALKS

Track Classification: SYMPOSIUM ON LASER ABLATION