

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



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### **PAULINA SEGOVIA-OLVERA: Laser induced periodic surface structures on Bi and Ti thin films under femtosecond irradiation.**

*Thursday, 20 February 2020 13:00 (30 minutes)*

The laser induce periodic surface structures (LIPSS) have attracted considerable attention due to its potential to change, improve or provide new features to material surfaces. LIPSS appear as a quasi periodic pattern of parallel lines on the surface after being irradiated with linearly polarized laser radiation. These structures can be generated in a single-step process and their characteristics are strongly correlated with the irradiation parameters, such as; wavelength, polarization, angle of incidence. Generally, LIPSS are classified in two groups depending on their periodicity referred as Low Spatial Frequency LIPSS (LSFL) and High Spatial Frequency LIPSS (HSFL). Particularly, the use of femtosecond laser pulses to generate LIPSS offers the advantage of minimizing the formation of the heat-affected zone (HAZ), improving the spatial resolution of the surface modification. In this context, the LIPSS formation with fs pulses offers a plethora of options to design and fabricate functional surfaces with complex morphologies in micro and nano scale. Nevertheless, considering that the formation of the structures also depends on material properties and surrounding media, controlling the morphology of the LIPSS is a very difficult task. In this sense, the most recent results in the study of the formation of LIPSS on metals obtained by our research group will be discussed in this presentation.

**Session Classification:** PLENARY TALKS

**Track Classification:** SYMPOSIUM ON LASER ABLATION