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**2D and 3D multipactor modeling in dielectric-loaded accelerator structures**<sup>1</sup> OLEKSANDR SINITSYN, GREGORY NUSINOVICH, THOMAS ANTONSEN, IREAP, University of Maryland, IREAP TEAM — Multipactor (MP) is known as the avalanche growth of the number of secondary electrons emitted from a solid surface exposed to an RF electric field under vacuum conditions. MP is a severe problem in modern rf systems and, therefore, theoretical and experimental studies of MP are of great interest to the researchers working in various areas of physics and engineering. In this work we present results of MP studies in dielectric-loaded accelerator (DLA) structures. First, we show simulation results obtained with the use of the 2D self-consistent MP model (O. V. Sinitsyn, et. al., Phys. Plasmas, vol. 16, 073102 (2009)) and compare those to experimental ones obtained during recent extensive studies of DLA structures performed by Argonne National Laboratory, Naval Research Laboratory, SLAC National Accelerator Laboratory and Euclid TechLabs (C. Jing, et al., IEEE Trans. Plasma Sci., vol. 38, pp. 1354-1360 (2010)). Then we present some new results of 3D analysis of MP which include studies of particle trajectories and studies of MP development at the early stage.

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