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Beryllium deposition on ITER first mirrors: layer morphology and influence on reflectivity¹ GREGORY DE TEMMERMAN, MATT BALDWIN, RUSS DOERNER, DAISUKE NISHIJIMA, RAY SERAYDARIAN, UCSD, La Jolla, KLAUS SCHMID, CHRISTIAN LINSMEIER, LAURENT MAROT, University of Basel, Switzerland — Metallic mirrors will be essential components of the ITER optical diagnostics whose reliability may be affected by mirror reflectivity changes due to erosion and/or deposition of impurities (C, Be). The present study aims to assess the effect of Be deposition on the reflectivity of Cu and Mo mirrors and to collect data on the morphology of these layers. Mirrors were exposed in PISCES-B to collect eroded material from graphite and beryllium targets exposed to a Be-seeded D₂ plasma. After exposure, relative reflectivity of the mirrors was measured and the deposited layers were studied using different surface analysis techniques. Be layers formed in PISCES-B exhibit high levels of porosity and a reflectivity much lower than that of pure Be. It is found that if Be deposition occurs on ITER first mirrors, the reflectivity of the coated mirrors will strongly depend on the layer morphology, which in turn depends on the deposition conditions.

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