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【603】 RF plasma cleaning of ITER first mirrors with a quarter-wavelength filter

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The First Mirrors (FMs) in ITER diagnostic systems would be subject to deposition of material from the first wall (Be and W), which would severely compromise their optical properties. For a restoration, they would be routinely cleaned using RF discharges. The FMs would also be DC-grounded via a RF quarter wavelength filter, which significantly increases the plasma potential (from 30 V to over 100 V). This leads to an increased sputtering of the walls as well as their deposition on the FMs, reducing the plasma cleaning efficiency. In this contribution, we discuss various strategies experimented in ITER relevant mockup, to minimize wall sputtering and enhance plasma cleaning of DC-grounded FMs.

Primary authors: SONI, Kunal Dhirajlal (Universität Basel); ANTUNES, Rodrigo (University of Basel); Dr MOSER, Lucas (ITER Organisation); Dr SHIGIN, Pavel (ITER Organisation); Dr REICHLE, Roger (ITER Organisation); Mr STEINER, Roland (University of Basel); Dr MAROT, Laurent (University of Basel); Prof. MEYER, Ernst (University of Basel)

Presenter: SONI, Kunal Dhirajlal (Universität Basel)

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