

Revised Divertor Design for the new European 'DEMO LAR' reactor.

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The release of the new European DEMO LAR baseline affects the divertor design mainly in terms of input loads (e.g. heat flux) and poloidal profile. Two solutions are investigated, named “long leg” and “short leg” respectively. The long leg is defined and assumed as baseline, while the short leg is under further SOLPS analyses for complete investigations.

For both options, the grazing angle on vertical targets is maintained at 2° and the peak heat flux has been reduction during reattachment events nearly halved compared to the G1 baseline design option. This reduction ensures better manageability of the divertor under both nominal and off-normal conditions. The proposed 2D profiles should be supported by comprehensive plasma-wall interaction studies.

For these two solutions, the 3D models have been developed for a set of neutronic, thermohydraulic, electromagnetic and structural analyses for design optimization.

Speaker's title

Mr

Member State or IGO

Italy

Speaker's Affiliation

ENEA Nuclear department - via E. Fermi -00044 Frascati, Italy

Authors: Dr MAZZONE, Giuseppe (ENEA Nuclear Department, via E. Fermi 45, 00044 Frascati, Italy); Prof. YOU, Jeong-Ha (Max Planck Institute for Plasma Physics, Boltzmann Str. 2, 85748 Garching, Germany); MARZULLO, Domenico (University of Trieste, Department of Engineering, 34127 Trieste, Italy); Mr IMBRIANI, Vito (Consorzio CREATE, Via Claudio 21, 80125, Napoli, Italy); Mr CLAGNAN, Andrea (University of Trieste -Consorzio CREATE, Via Claudio 21, 80125, Napoli, Italy); Mr BONAVOLONTA', Ugo (CAE Analyst & CAD Design System Engineering Area -System Modeling Unit); Mrs LANZOTTI, F (CREATE); DI PACE, Luigi (CSM Rina); Mr LUNGARONI, Michele (ENEA Nuclear Department, via E. Fermi 45, 00044 Frascati, Italy); Mr VALLONE, Eugenio (Department of Engineering University of Palermo); Mr DI MAMBRO, Gennaro (University of Cassino, Italy); Mr BELARDI, Valerio (University of Rome Tor Vergata, Department of Enterprise Engineering, Via del Politecnico 1, 00133, Rome); Mr FROSI, Paolo (ENEA Nuclear Department, via E. Fermi 45, 00044 Frascati, Italy); Mr MASSANOVA, Nicola (University of Trieste, Department of Engineering, 34127 Trieste, Italy - Consorzio CREATE, Via Claudio 21, 80125, Napoli, Italy); Mr CAPOBIANCO, Damiano (CSM Rina)

Presenter: Dr MAZZONE, Giuseppe (ENEA Nuclear Department, via E. Fermi 45, 00044 Frascati, Italy)

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