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A New Code for Resistive Wall Mode Modeling with 3D Conducting Structures YUEQIANG LIU, Chalmers University of Technology, Sweden, R. ALBANESE, Universita di Napoli, Italy, A. PORTONE, EFDA CSU, EU, G. RUBINACCI, Universita di Napoli, Italy, F. VILLONE, Universita di Cassino, Italy — The resistive wall mode (RWM) is a macroscopic MHD instability that limits the fusion power production of advanced tokamaks. Realistic modeling of this mode often requires detailed 3D description of the conducting structures such as the surrounding resistive wall. We have developed a new code CarMa [1] by coupling the MHD stability code MARS-F [2] with the 3D finite element based eddy current code CARIDDI [3]. The coupling scheme is shown correct both analytically and numerically. Feedback stabilization of RWM is investigated for ITER advanced scenarios.

[1] R. Albanese, et al., COMPUMAG 2007 conference, Aachen (Germany), June 2007

[2] Y.Q. Liu, et al., Phys. Plasmas 7, 3681 (2000)

[3] R. Albanese, G. Rubinacci, Adv. Im. El. Phys.,102, 1-86, Acad. Press 1998

Yueqiang Liu
Chalmers University of Technology

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