

Abstract Submitted
for the DPP20 Meeting of
The American Physical Society

OMAS: A Python Library to Interface with the ITER Integrated Modeling and Analysis Suite (IMAS)¹ ORSO-MARIA MENEGHINI, STERLING P. SMITH, DAVID ELDON, BRENDAN C. LYONS, JOSEPH MCCLEENAGAN, General Atomics, TIM SLENDEBROEK, Oak Ridge Associated Universities — The ITER IMAS effort is driving the worldwide adoption of the Physics Data Model (PDM) as the standard data structure (ie. ontology) for managing tokamak fusion data. OMAS is a numerical library designed to facilitate the adoption of the PDM within Python codes, and ease their interface with IMAS. In OMAS the data strictly adheres to the PDM, and it is presented to the developers as objects behaving like familiar Python dictionaries and lists. Conveniently, these objects can perform automatic COordinate CONventionS (COCOS) transformations, grid interpolation, and units conversions. In addition to IMAS, OMAS supports saving/loading data in universal data formats such HDF5, JSON files, and MongoDB. We will present a series of diverse examples that illustrate how OMAS has been adopted across the fusion community to: 1) interface with IMAS; 2) support the integration of physics codes in complex workflows; and 3) curate databases of both experimental and modeling fusion data.

¹Work supported by DoE Contracts DE-SC0017992 (AToM), DE-FG02-95ER54309 (GA theory)

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Date submitted: 02 Jul 2020

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