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3D equilibrum reconstruction for the RFP with V3FIT DAVID TERRANOVA, LIONELLO MARRELLI, Consorzio RFX, Padova, Italy, JAMES HANSON, Auburn University, Auburn, AL, USA, STEVEN HIRSHMAN, ORNL, Oak Ridge, TN, USA, GOBBIN MARCO, GREGORIO TREVISAN, Consorzio RFX, Padova, Italy — Helical states are routinely found in all Reversed Field Pinch experiments and their description requires a 3D equilibrium reconstruction. We present the application of the V3FIT code for the RFX-mod experiment. Magnetic and kinetic diagnostics (T_e from Thomson scattering, SXR emissivity, N_e from interferometer) are used in order to properly deal with the problem of degeneracy when only external magnetic measurements are used. A sensitivity study of external measurements on the internal topological structure is also presented, showing a link between external measurements and internal profiles. Fixed-boundary equilibria can be computed by independently calculating vacuum fields. The results provide a good match with experimental data and the obtained equilibria are suitable for both transport and stability analysis.

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