Abstract Submitted
for the DPP16 Meeting of
The American Physical Society

A polarimeter for JT-60SA: chords layout study with V3FIT for q profile reconstruction DAVID TERRANOVA, Consorzio RFX, Padova, Italy, ALEXANDRU BOBOC, CCFE, Culham Science Centre, Abingdon OX14 3DB, UK, CHRISTOPHE GIL, CEA, IRFM, F-13108 Saint-Paul-lez-Durance, France, SORIN SOARE, ICIT, Rm. Valcea, 240050, Romania, FRANCESCO ORSITTO, Consorzio CREATE, Napoli, Italy, RYOTA IMAZAWA, JAEA, 801-1 Mukoyama, Naka 311-0193, Japan — JT-60SA is the new tokamak device that is being built in Japan under the Broader Approach Satellite Tokamak Programme and the Japanese National Programme [JT-60SA Research Plan, Version 3.3, March 2016, www.jt60sa.org/pdfs/JT-60SA_Res_Plan.pdf] and will operate as a satellite machine for ITER. To provide valuable information for the steady state scenario for ITER and the design of DEMO, a high β_N scenario is included in the program, where the real-time control of the q-profile is needed. In this work we present a study of the geometry of the polarimetry chords, derived from a true realistic CAD-driven feasibility study, aiming at an optimization in terms of q-profile reconstruction, using the V3FIT code [J.D. Hanson et al., Nucl. Fusion 49 (2009) 075031]. Some magnetic and kinetic measurements are considered along with the FIR poloidal polarimeter in order to assess the possibility of estimating q in the core with the required accuracy (around 10%) providing a diagnostic for a continuous measurement useful in high density pulses where MSE measurements would not have adequate time resolution.

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Date submitted: 13 Jul 2016 Electronic form version 1.4