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## P3.033 Plasma equilibrium based on EC-driven current profile with toroidal rotation on QUEST

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In the EC-driven (8.2 GHz) steady-state plasma on QUEST, plasma current seems to flow in the open magnetic surface in the outside of the closed magnetic surface in the low-field region according to plasma current fitting (PCF) method. First, plasma equilibrium solution was fitted assuming all plasma current is flowing in the inside of the LCFS. It was solved within isotropic pressure profile by EFIT code. Opposite-polarity current density region appeared in the high-field region. The elongation ratio of the LCFS is about unity and the aspect ratio is lower than two. Second, particle orbit-driven current density profile showed hollow current profile and shifted outward. The equilibrium fitted by SU-EFIT does not coincide with the orbit-driven current profile even with not-nested magnetic surfaces. The numerical solution of Grad-Shafranov equation could not show the steady-state current profile with skin and peaked profile. Third, considering the toroidal rotation, the equilibrium is fitted within nested magnetic surfaces by SU-EFIT. Though the plasma magnetic axis shifts outward due to the centrifugal force, the opposite polarity current does not disappear in the high-field region. The equilibrium will be fitted also in EC-driven (28 GHz) steady-state plasma and the fitted toroidal rotation speed will be compared with the measured one.

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