

# PUMP PLENUM PRESSURE DEPENDENCE ON DIVERTOR PLASMA PARAMETERS AND MAGNETIC GEOMETRY IN THE DIII-D TOKAMAK

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**Abstract.** A first-flight neutral transport model to describe the dependence of pump plenum neutral pressure on plasma parameters and magnetic geometry is presented. It is shown that the model is in excellent agreement with neutral pressure data from a low recycling DIII-D tokamak discharge. It is also shown that the main contribution to plenum pressure arises from the part of the ion particle flux profile which is closest to the plenum entrance. This work illustrates the sufficiency of a simple model in divertor plenum hardware design studies to maximize particle exhaust for density control.