

Core transport solver

Sawtooth
if $q < 1$

Stiff electrostatic turbulence
ITG, TEM, ETG

Coupled SOL-pedestal module

Pedestal model

MHD stability

Δp , Δw_{ne} , $\Delta w_{Te/Ti}$

PB,

resistive MHD

δ , v^* , Z_{eff} , β_N , j_{bs} , $n_{e,SEP}$, $n_{e,PED}$, α_c , η_e , $\eta_{Spitzer}$

n_e^{pos} , T_e^{pos} , R/L_{Te}

Transport

$L_{Te/Ti}$, $L_{ne}(S_{iz})$

KBM, MTM,

ETG, ITG, Neoc.

P_{SOL} & λ_q & λ_n & λ_T

S_{iz} , $n_{e,SEP}$, $T_{e,SEP}$, c_{IMP}

SOL model

$n_{e,SEP} \sim$ SOL particle / pressure balance

$T_{e,SEP} \sim$ SOL power balance

$c_{IMP} \sim$ SOL power balance

$S_{iz} \sim$ SOL recycling

Upstream drive: P_{SOL} & λ_q & λ_n & λ_T

Density control: Fuelling, seeding, pumps

PFC: divertor geometry, material/conditions, recycling

SOLPS, EDGE2D-EIRENE, etc.

+ equilibrium & current evolution + particle, impurity, momentum transport + sources, etc.

JETTO, ASTRA, TRANSP, ETS, RAPTOR, etc.

