

Model	Geometry	Analytic tests	BOUT or BOUT++ comparison	Reference
RB	flux tube	X	X	1, B
RB	divertor		X	1
ES RD	slab	X	X	1, C
ES RD	cylinder		X	1
EM RD	slab	X	X	1, C
slab ITG	slab	X	X	1, D
toroidal ITG	flux tube	X		H
GAM	flux tube	X		1, E
EM kink	cylinder	X		F
ELM (ideal)	tokamak		X	I
parallel KH	slab	X		G
kinetic RB	flux tube	X		J

Table 1 2DX Benchmark tests

Notes and key:

Physics models tested:

RB = resistive ballooning

RD = resistive drift

ES = electrostatic

EM = electromagnetic

ITG = ion temperature gradient (slab and toroidal are distinct branches)

GAM = geodesic acoustic mode

KH = Kelvin Helmholtz

Geometries employed:

slab = Cartesian slab with one or more components of k specified as input

flux tube = model flux tube geometry for closed surfaces

divertor = global full X-point divertor geometry using experimental equilibria

cylinder = LAPD geometry

tokamak = model toroidal geometry for closed surfaces

References:

1. D. A. Baver, J. R. Myra and M.V. Umansky, Comp. Phys. Comm. 182, 1610, (2011).

B - J refers to documents linked from the parent directory