



UKAEA Exhaust Workshop

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Drifting cold-ion flow boundary condition at the magnetic presheath entrance

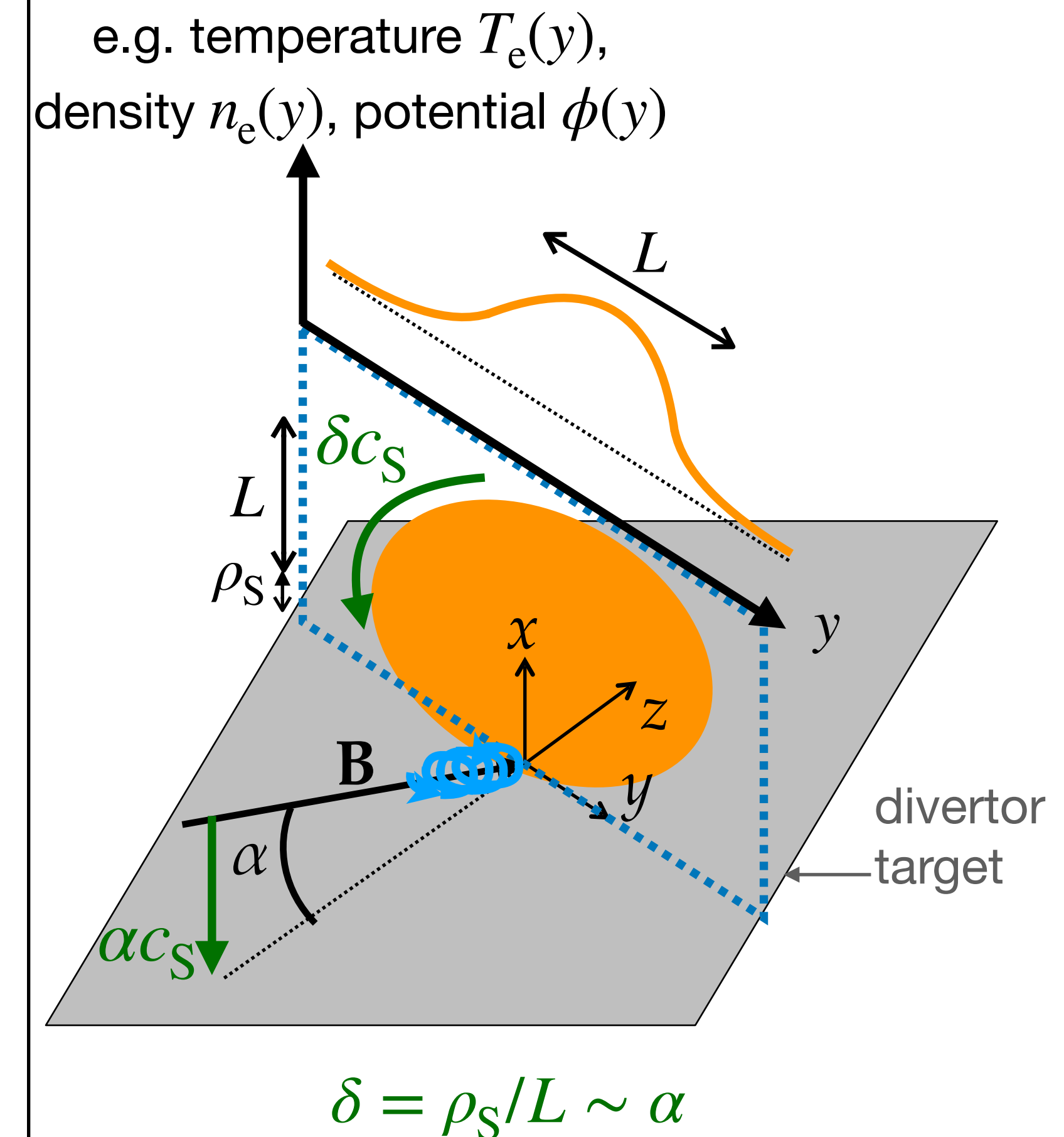
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- Fluid Scrape-Off Layer models:
 1. have a fairly large number of equations
 2. account for complicated magnetic geometries
 3. include physics of neutrals
 4. use highly sophisticated numerical methods
 - 5. have to deal with wall boundary conditions**
- Boundary conditions with drifts can enhance/suppress transport to wall
- State of the art treats drifts as perturbative corrections [1,2], but this becomes inaccurate
- **Outflow (Bohm)** condition solved as differential equation: include full effect of **flow shear**
- **Reflecting** flow condition based on self-consistent **flow circulation** in boundary layer



[1] P. C. Stangeby & A. V. Chankin, *Physics of Plasmas*, **2**(3), 707-715 (1995).

[2] J. Loizu, P. Ricci, F. D. Halpern & S. Jolliet. *Physics of plasmas*, **19**(12) (2012).