

TCV Experiments towards the Development of a Plasma Exhaust Solution



- Study physics of plasma exhaust and detachment in single-null and for a wide range of alternative divertor configurations
 - Ohmic L-mode plasmas in reverse B_T with density ramps or nitrogen seeding
- Basic geometric variations
 - **Flux expansion** → Little effect on detachment threshold
 - **Divertor leg length** → Decreases detachment threshold
 - **Connection length** → Access to deeper detachment
- Alternative divertor configurations
 - **X divertor** (flux flaring) → Little effect on detachment threshold, but access to deeper detachment
 - **Super-X divertor** (larger target radius) → Reduces $q_{||}$ at target, but no decrease of threshold
 - **Snowflake divertor** (2 nearby x-points) → Little effect on detachment threshold, but access to deeper detachment
- Demonstration of predicted stable radiation zone between x-points of ‘snowflake minus’ with nitrogen seeding

