Effect of snowflake on divertor heat flux during disruption

- **Motivation:** If advanced divertor configurations can reduce conducted heat flux to divertor during TQ, need for high fraction (~90%) core radiation can be reduced, easing mitigation

- **Plan:** Induce natural disruption with snowflake target. Measure width of thermal footprint from TQ on divertor. Repeat with standard divertor & compare.

- **Critical Hardware:** IR camera on lower divertor

- **Time:** 0.5 day (0.25 min)

Using private flux MGI as super-radiative divertor for disruption mitigation

- **Motivation:** Primary purpose of TQ mitigation is to protect divertor from conducted heat flux. However, we usually do this by injecting impurities into core, far away from divertor. Can impurities injected directly into divertor legs protect divertor from conducted heat while staying out of core & allowing "warm" post-TQ core plasma (10's-100eV)? That would significantly reduce E-field for RE production.

- **Plan:** Start with plasma shape with one divertor leg directly over the PFR MGI. Initiate an unmitigated disruption (ramp Ip, perhaps) and observe the divertor heat flux. Then repeat, but fire neon MGI into inner leg. Compare inner/outer heat fluxes for mitigated & unmitigated cases. Sweep legs across MGI shot-to-shot to observe any change in inner/outer heat flux as position of MGI within PFR is shifted.

- **Critical Hardware:** Divertor IR camera divertor, SPRED,fast bolometers,interferometer

- **Time:** 0.5 day (0.25 min)