# *Formation and termination of runaway beams during vertical displacement events in ITER disruptions*

A simple 0-D model which mimics the plasma surrounded by the conducting structures [*D.I. Kiramov, B.N. Breizman, Phys. Plasmas* ***24****, 100702 (2017)*], including the vertical plasma motion and the generation of runaways, has been used for an evaluation of the runaway current dynamics during the disruption

*Formation of the runaway beam:* In ITER, with a highly conducting wall, the total plasma current when the plasma touches the wall is always the same, but the runaway current at that time significantly decreases for large enough amount of impurities. The plasma velocity is larger and the time to hit the wall shorter for lower runaway currents, when larger amounts of impurities are injected

*Scraping-off and termination of the current:* When the plasma touches the wall, the scrapping-off phase starts. During this phase, the plasma velocity and electric field can substantially increase leading to the deposition of a noticeable amount of energy on the runaway electrons (more than 100 MJs)

An earlier second impurity injection can reduce somewhat the amount of energy deposited on the runaways. Also larger temperatures during the scraping-off might be efficient in reducing the power fluxes due to the runaways onto the PFCs

The plasma reaches the $q_a = 2$ limit before the current is terminated and the amount of energy deposited on the runaways until that time can be substantially lower than that initially expected for the scraping-off phase until the current goes to zero