

# Edge Profile Response Induced by Perturbations on the $n=3$ Static Fields

A. Diallo

J. Canik, M. Podesta, V. Soukhanoskii, and others....

Goals:

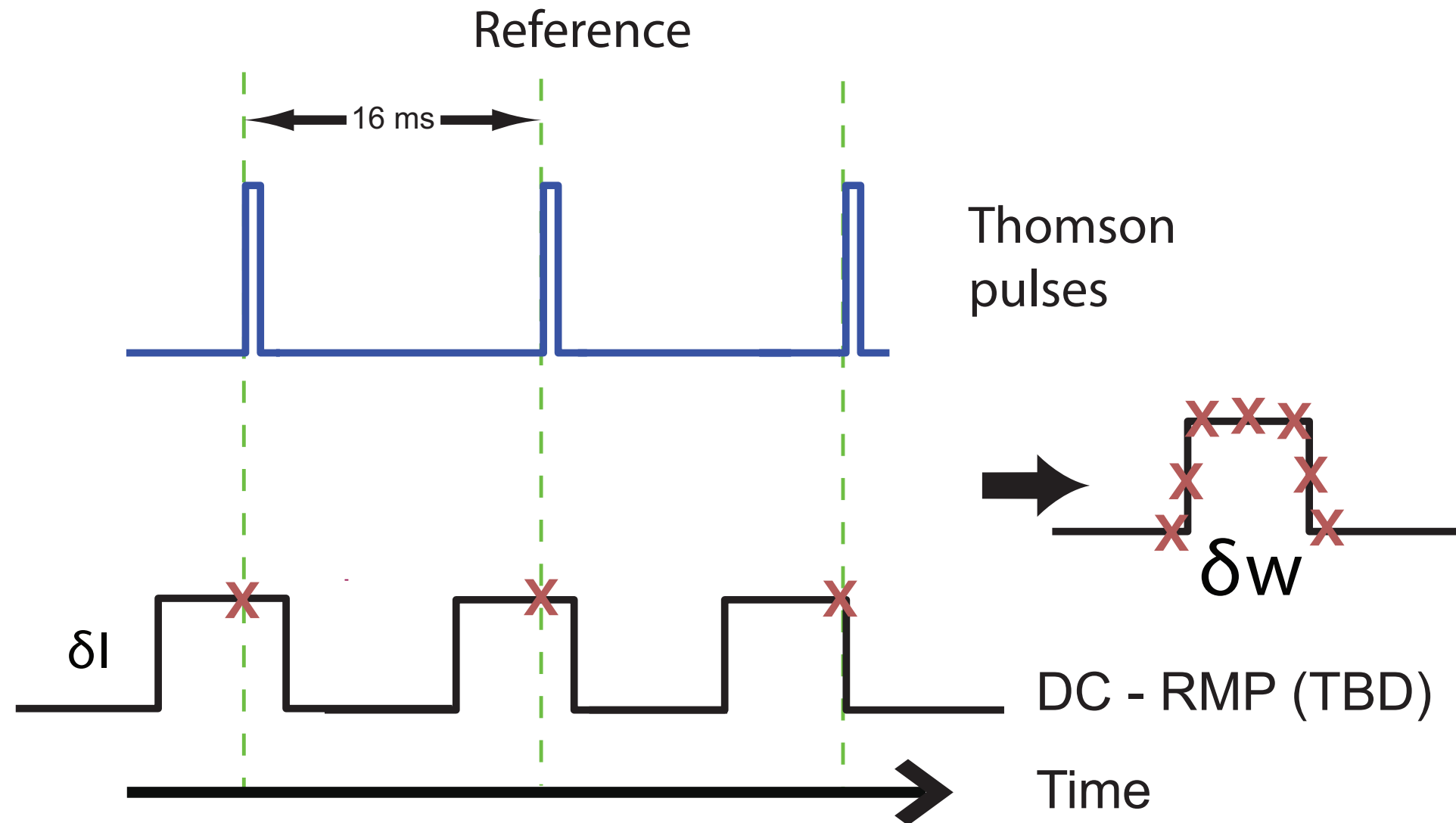
- 1) Characterize the edge profile perturbation induced by 3D fields.
- 2) Estimate/infer the diffusive and convective terms of transport using SOLPS.

Run day: 0.25 or piggy back?

# Measure the dynamic response of the density/ temperature profiles induced in the presence of 3D field perturbations

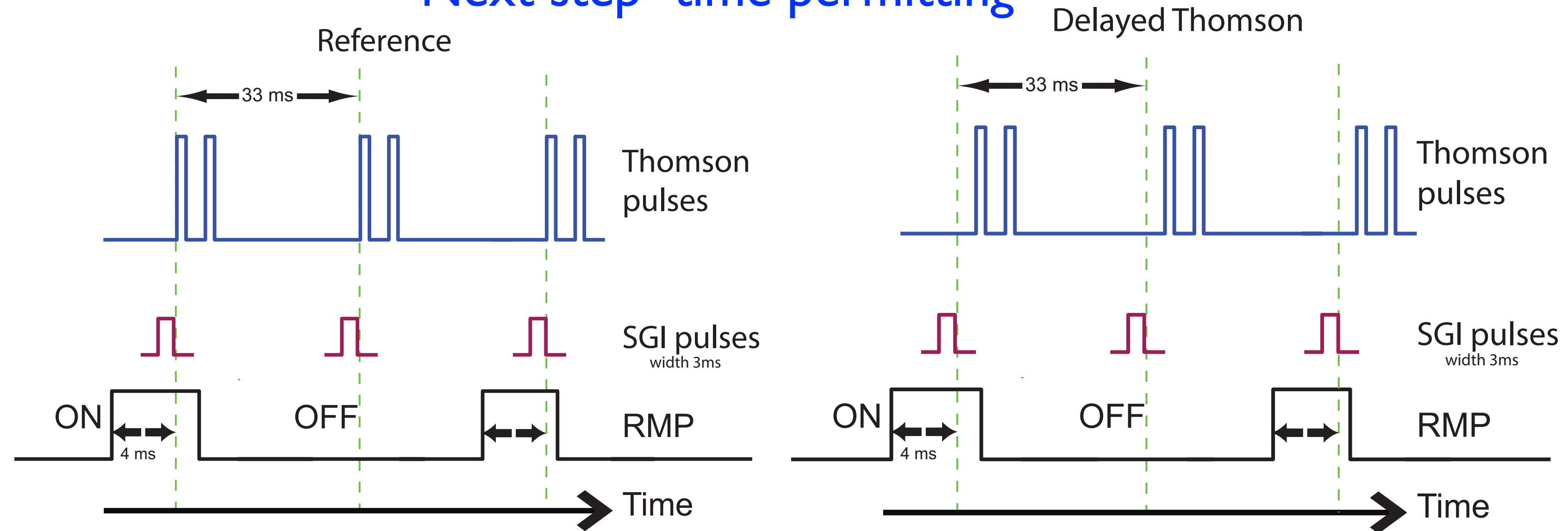
- Make use of the two-laser Thomson system to measure the electron density and temperature *in synchronous* with perturbation applied on the static  $n=3$  fields.
- Use  $n=3$  static fields waveforms initially used by J. Canik's XP.
  - ▶ requires ELM-free regime
  - ▶ approach the marginal current required for profile changes.
- Delay the applied square pulses on top of the DC fields.
  - ▶ To reconstruct the response of the edge profile on a shot-to-shot basis

# Sketch of key waveforms: Scalpel Approach



- Vary current in coils and width of the perturbation to avoid triggering ELMs
- The reconstruction of the edge profile in sync with these perturbation will inform us on the profile time response.

# Widening the exploration: “Next step- time permitting”



- This sketch insures same nominal discharge conditions
- Optimize RMP amplitude and width to avoid triggering ELMs
- Scan the delayed Thomson on a shot-to-shot basis
- Repeat for small and large RMP perturbations