Towards feedback control on JET:

Sawtooth / ELM period reference

Controller

Measured period

Actuator

ECCD/ICRF / Gas Injection

Power absorption location

Gas flow

Diagnostic

ECE Bolometer

Plasma

Real Time Sawtooth / ELM Period Determination

Sawtooth frequency

Low Field Side ICRH can shorten sawteeth

Destabilisation irrespective of phase

Real Time control of ICRH frequency to change absorption location ->

Difficulty: Slow and small range (10cm)

ELM frequency

- Feedback control using gas injection
- Maintain frequency when ‘disturbed’ by pellets and tungsten influx