Development of ECWC at $\omega = 2\omega_{ce}$ on TCV for the operation of JT-60SA

ECWC envisioned in JT-60SA for wall conditioning with $B_T$ on

- Experiments performed in TCV in support of JT-60SA operation

Low absorption of EC wave and low uniformity of ECWC at $\omega = 2\omega_{ce}$
- Need to improve uniformity & wetted area, thus conditioning efficiency
- Need to demonstrate ability of ECWC to control wall surface state in ensuing plasma

$B_R$ and $B_V$ combination found that maximize wall coverage inboard (where ohmic plasmas are initiated)

... and maximize conditioning efficiency

ohmic plasma successfully sustained in TCV after ECWC at $\omega = 2\omega_{ce}$, whereas it would not have been possible without