

## Rheology comparison through the statistical analysis of TITAN2D dynamics

**Parameters ranges** – all uniformly sampled in linear scale, 256 samples

Volcan de Colima DEM – 5m cellsize

VOLUME –  $[1.21, 1.64] \times 10^5 \text{ m}^3$

MC

$\phi_{\text{bed}} - [15^\circ, 37^\circ]$        $[\tan(\phi_{\text{bed}}) = (0.27, 0.75), \text{ consistent with } \mu \text{ of VS}]$

$\phi_{\text{int}} - [35^\circ, 45^\circ]$

VS

$\mu - [0.20, 0.80]$

$\xi - [50, 5000]$

PF

$\phi_1 - [30^\circ, 38^\circ]$

$\phi_2 - [39^\circ, 45^\circ]$

$\beta - [0.10, 0.85]$

$L - [0.1, 10]$

FIGURE 1 – Resultant Forces

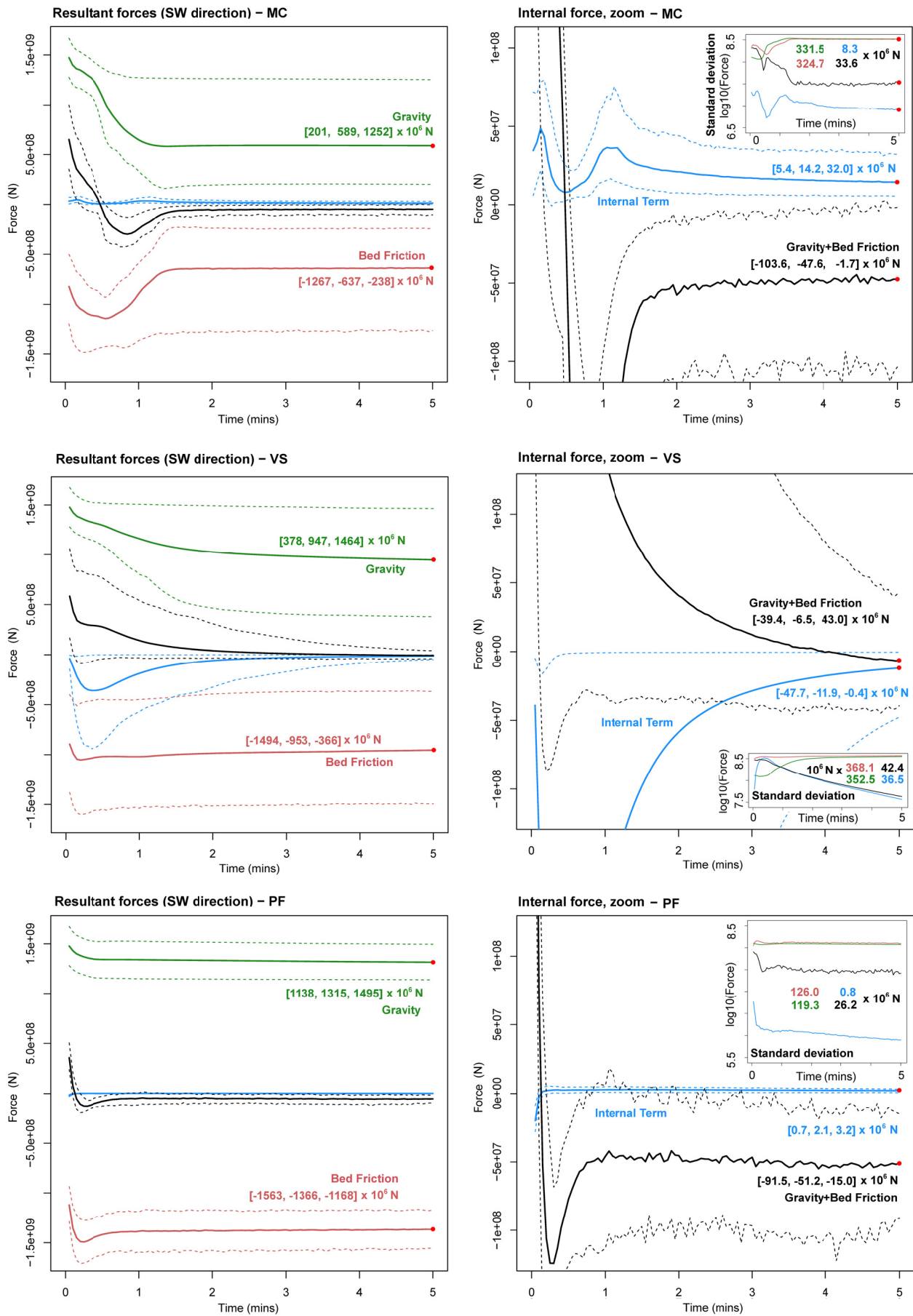


FIGURE 2 – Powers

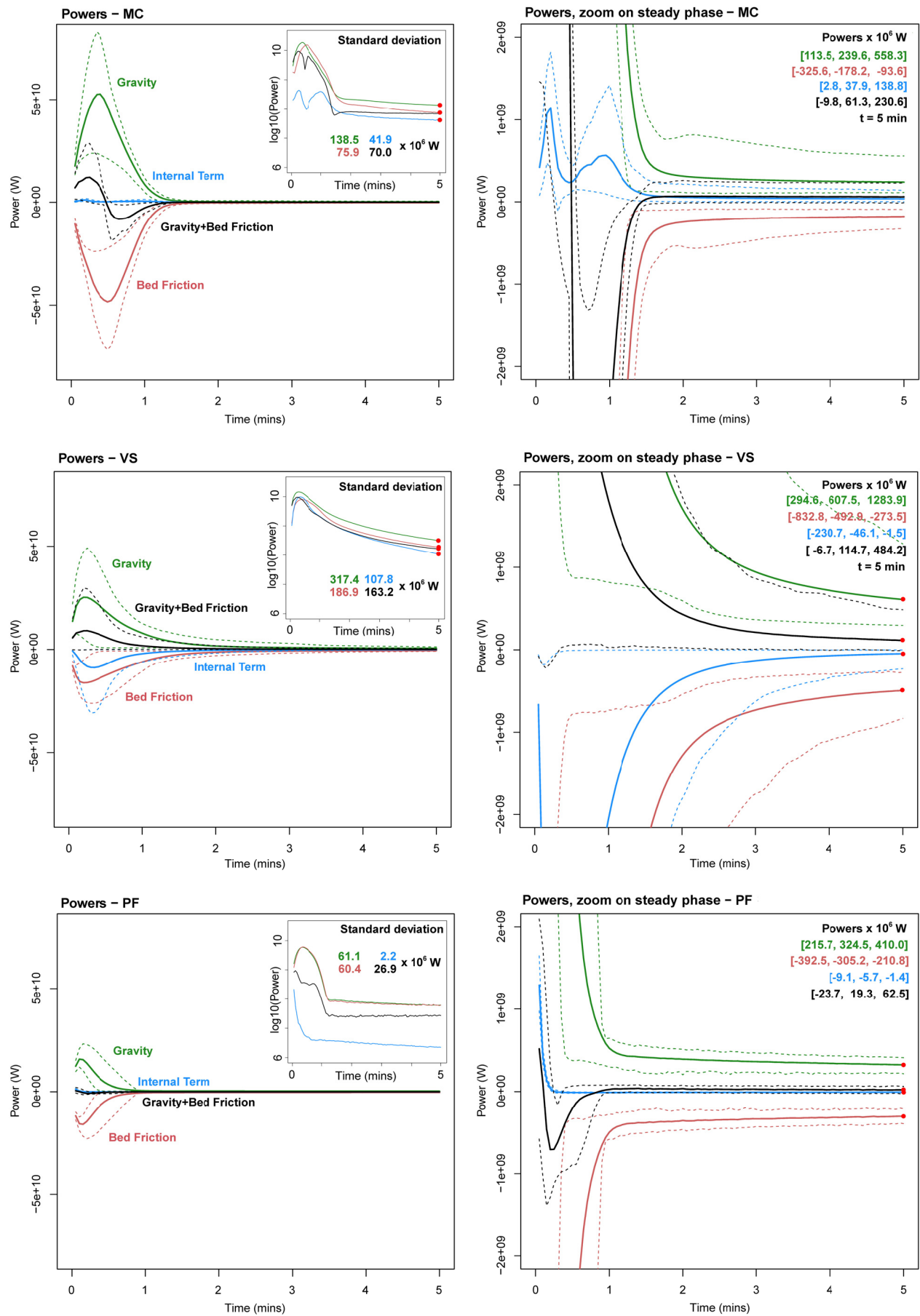


FIGURE 3 – Mean velocity

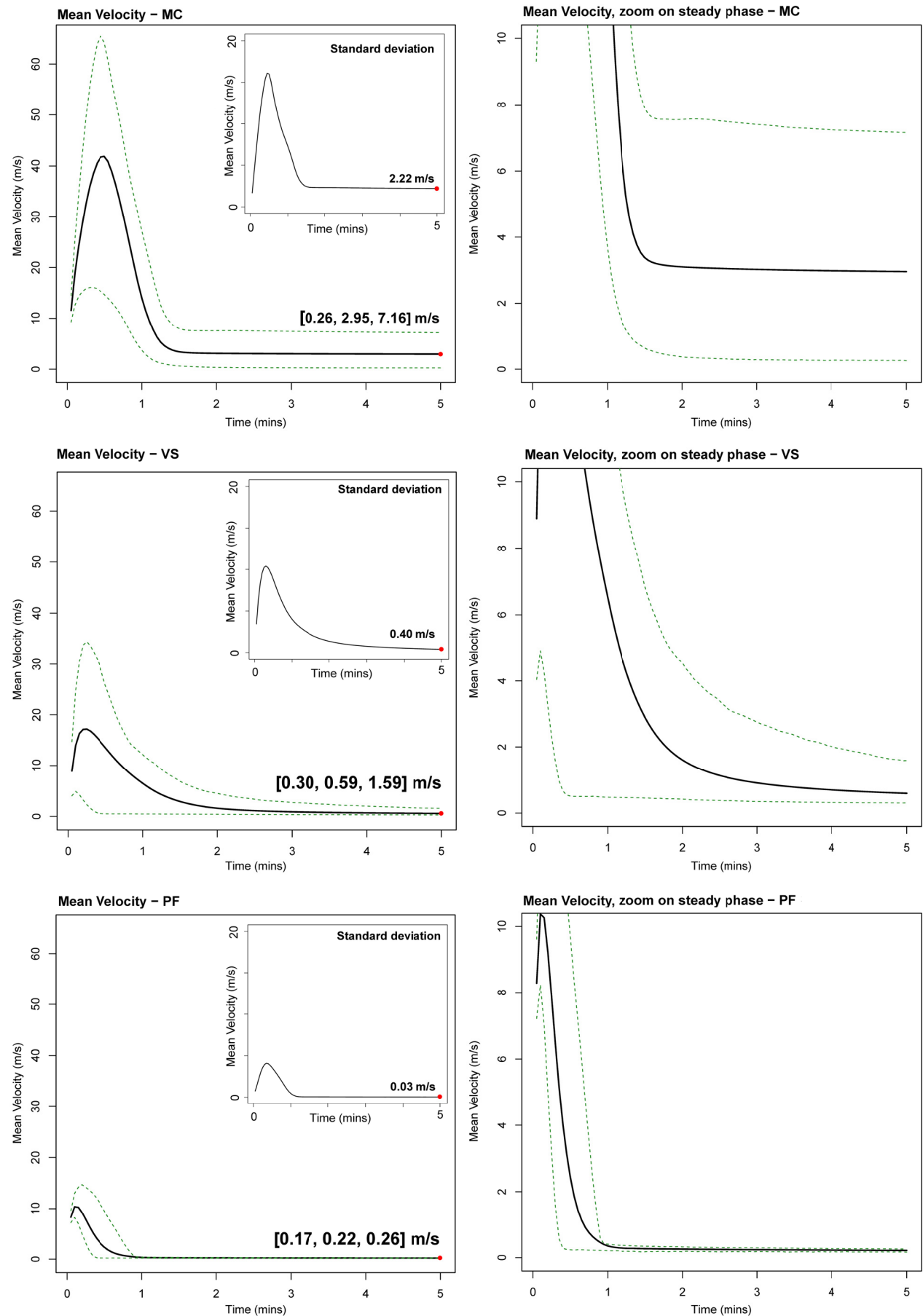


FIGURE 4 – Inundated area

