

The article corresponding to this code has appeared as

Durstewitz D (2017) A state space approach for piecewise-linear recurrent neural networks for identifying computational dynamics from neural measurements. PLoS Comput Biol 13(6): e1005542. <https://doi.org/10.1371/journal.pcbi.1005542>

Note: The published article contains two typos:

- On p. 9, the computational complexity of the global maximization approach to state inference as suggested in Paninski et al. (2010), J Comput Neurosci, is somewhere between $O(T \times M^2)$ and $O(T \times M^3)$ (not $O(T \times M)$), just as for the standard Kalman filter (i.e., linear in time, but each time step requires an M -dimensional matrix inversion).
- On p. 25, eqn. (15) should read:

$$\int_{\theta_k}^{\infty} \int_{\theta_l}^{\infty} p(z_k, z_l) z_k z_l dz_k dz_l \approx \lambda_k^{-1} N_l \left[\lambda_l^{-1} N(\theta_k; \mu_{lk}, \lambda_l^{-1}) + \mu_{lk} F(\theta_k; \mu_{lk}, \lambda_l^{-1}) \right] \\ + \left[\sigma_k^2 z_l^{\max} N_k + (z_k^{\max} z_l^{\max} + \sigma_{kl}^2) F_k \right] F(\theta_l; \mu_l, \lambda_k^{-1})$$

(The eqn. is correct in the code as used and published here on github, just misprinted in the paper.)