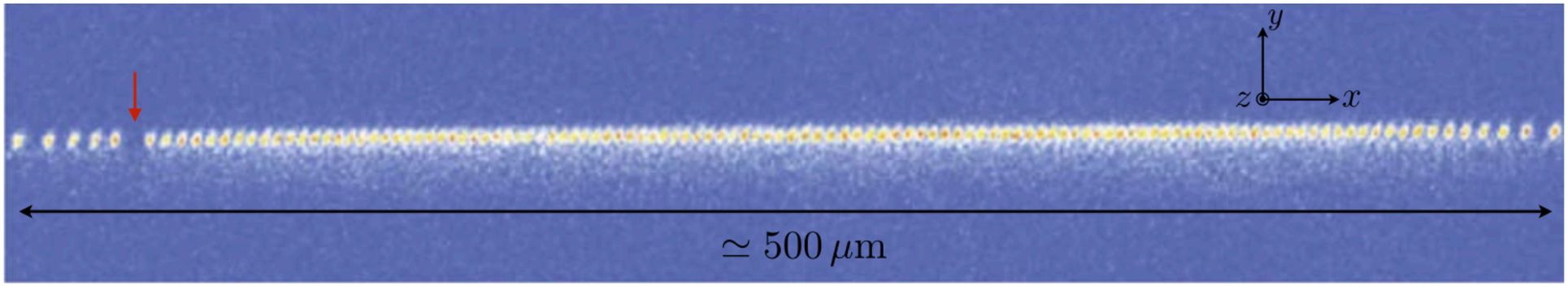
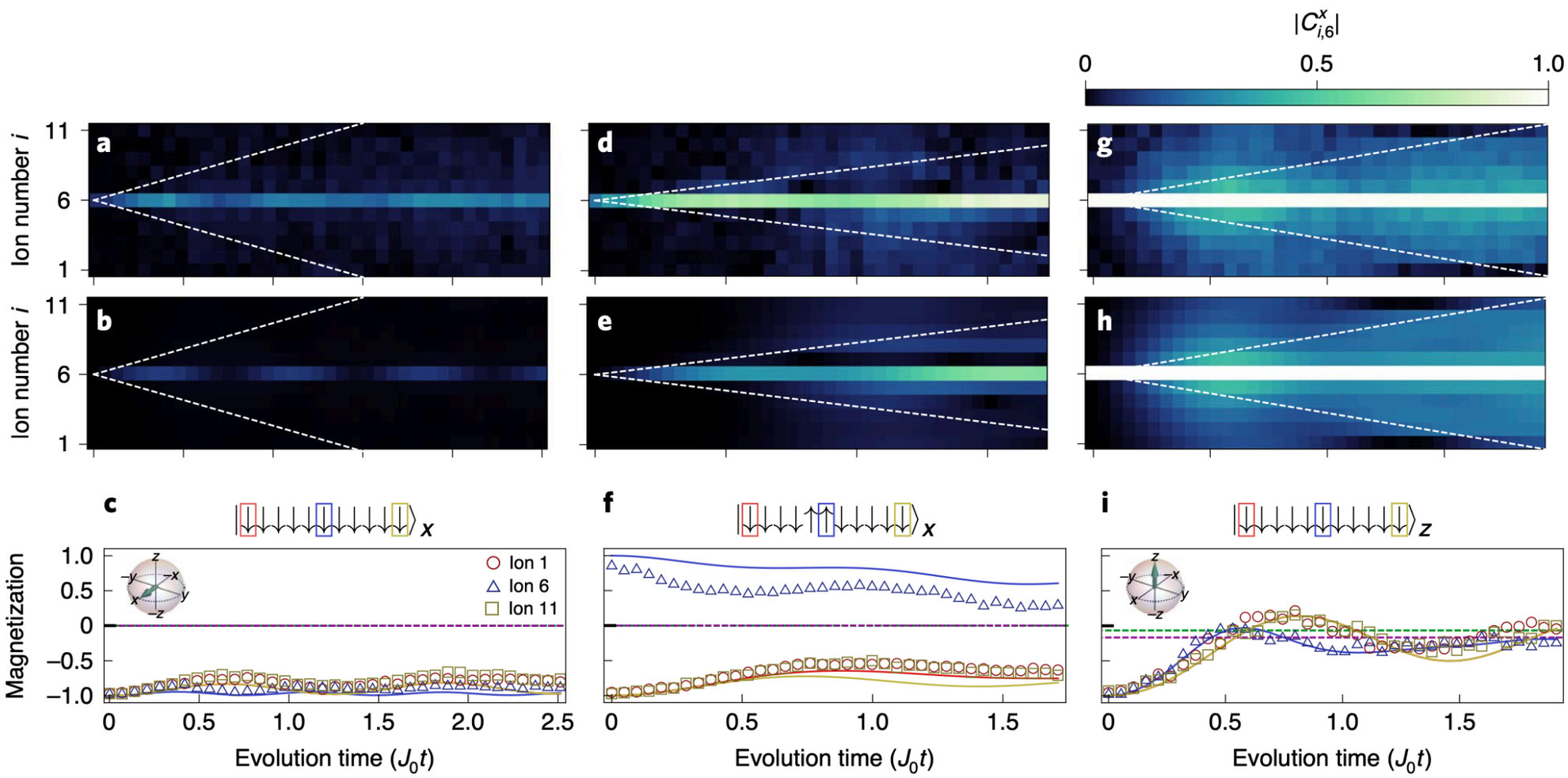
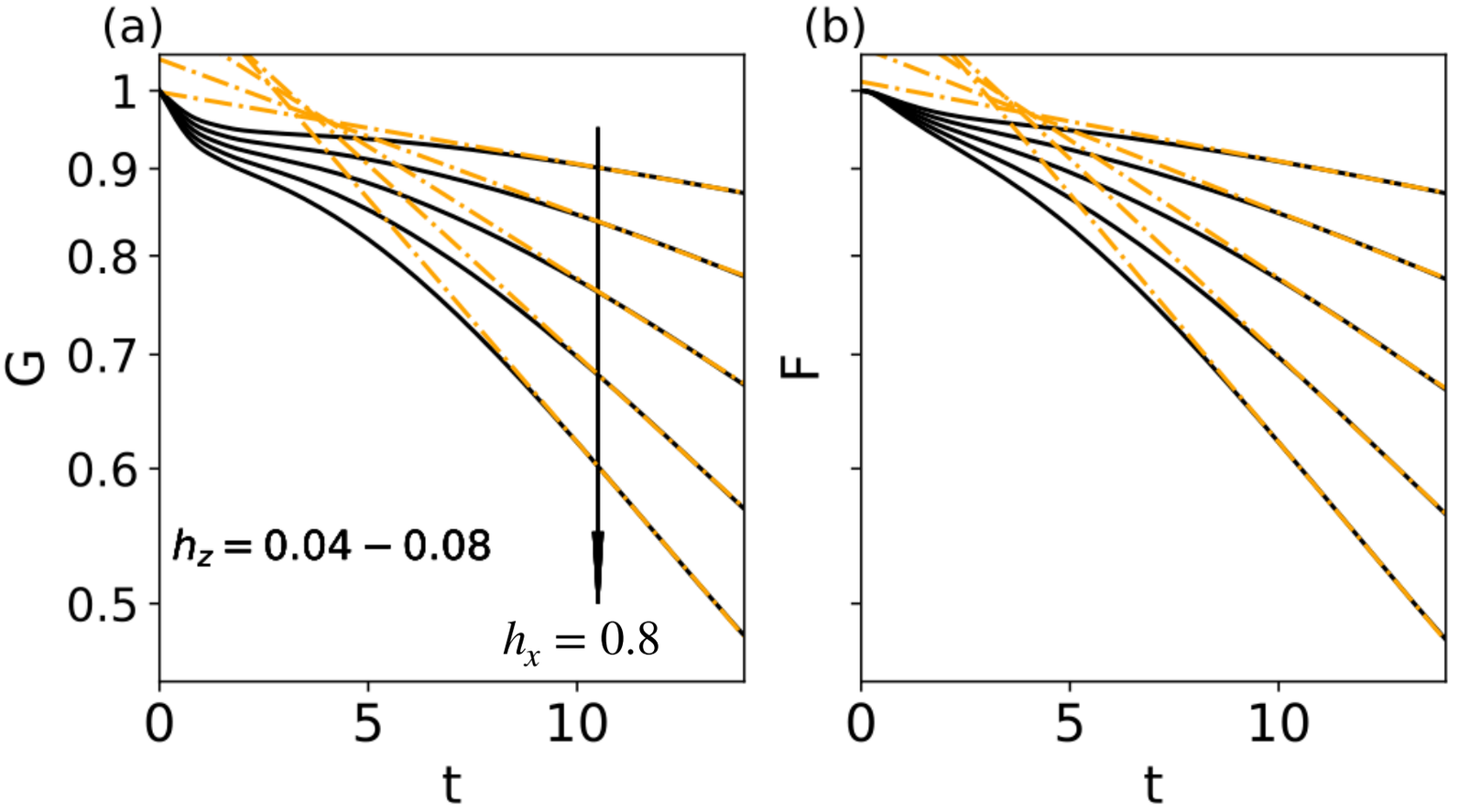
Spin models are engineered in quantum simulators



G Pagano et al 2019 Quantum Sci. Technol. 4 014004



Tan, W.L., Becker, P., Liu, F. et al. Domain-wall confinement and dynamics in a quantum simulator. Nat. Phys. ***17****, 742–747 (2021).*



$$F(t) = \frac{\langle \sigma_i^z(t) \rangle + \langle \sigma_i^z(0) \rangle}{2\langle \sigma_i^z(0) \rangle}$$

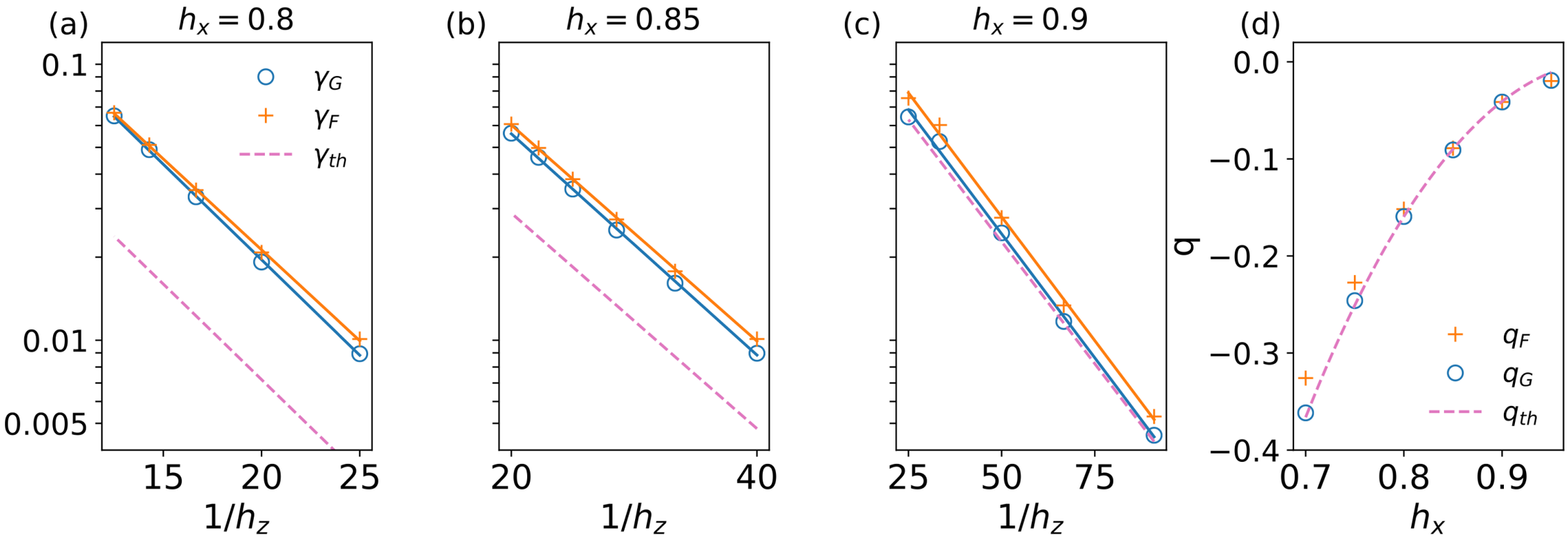
$$G(t) = 1 - ||\rho(t) - \rho(0)||_1$$

A question of time scales separation: $\tau_r \ll \gamma^{-1} \ll \tau_D$

Phys. Rev. B 104, L201106 (2021)

More on the time scales …

- O. Pomponio, M. A. Werner, G. Zarand, G. Takacs, SciPost Phys. 12, 061 (2022).
- S. Birnkammer, A. Bastianello & M. Knap, *Nat Commun* **13**, 7663 (2022).



$$\gamma_O = k_O e^{-q_O/h_z}, \qquad O = F, G\,.$$

$$q_{\mathrm{th}} = |f(-i \ln h_x)|/M$$

Phys. Rev. B 104, L201106 (2021)