

- Planckian dynamics (*i.e.* fastest possible local thermalization in a time  $\hbar/(k_B T)$ ) is realized in the ‘solvable’ SYK models.
- Black holes thermalize in a Planckian time  $\sim \hbar/(k_B T_H)$ , where  $T_H$  is the Hawking temperature.
- A Schwarzian theory of a time reparameterization mode, with  $SL(2, \mathbb{R})$  symmetry, (along with a phase fluctuating mode) describes the quantum dynamics of
  - the SYK models
  - black holes with near-extremal  $AdS_2$  horizons
- Lattices of SYK islands have led to a partial understanding of strange metals.