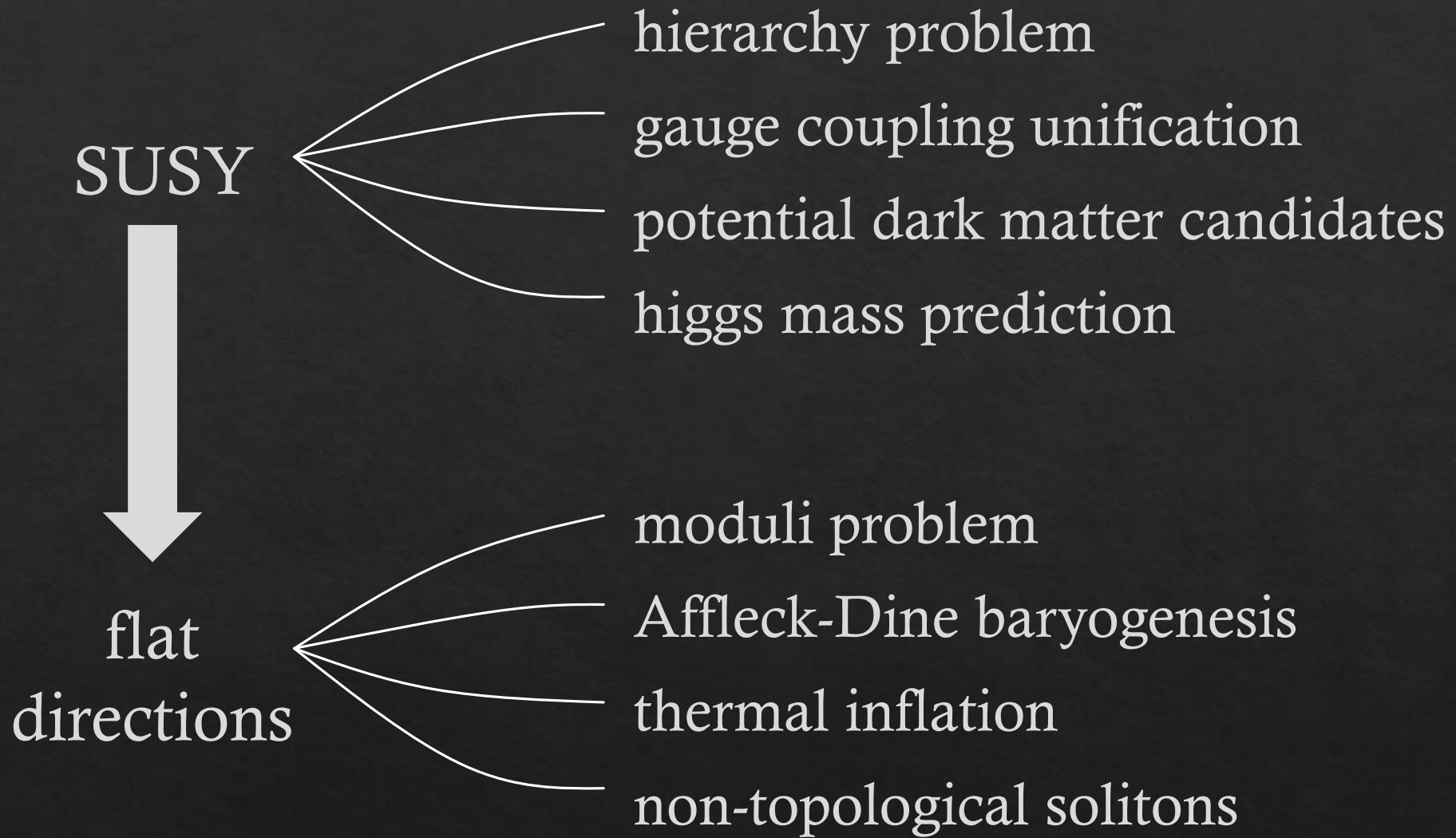
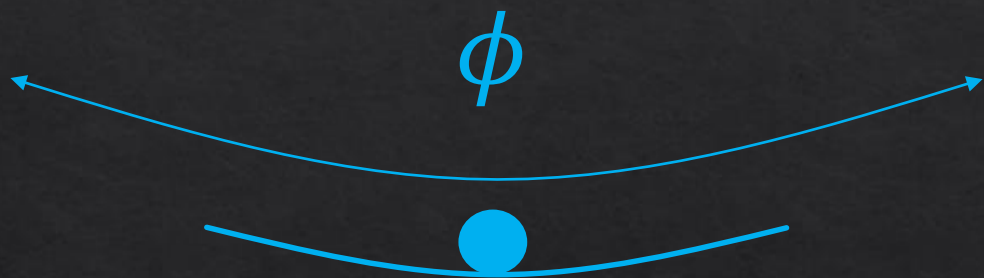


Damping of an oscillating scalar field indirectly coupled to a thermal bath

Erwin H. Tanin (IBS-CAPP)

Based on Erwin H. Tanin and Ewan D. Stewart (in preparation)

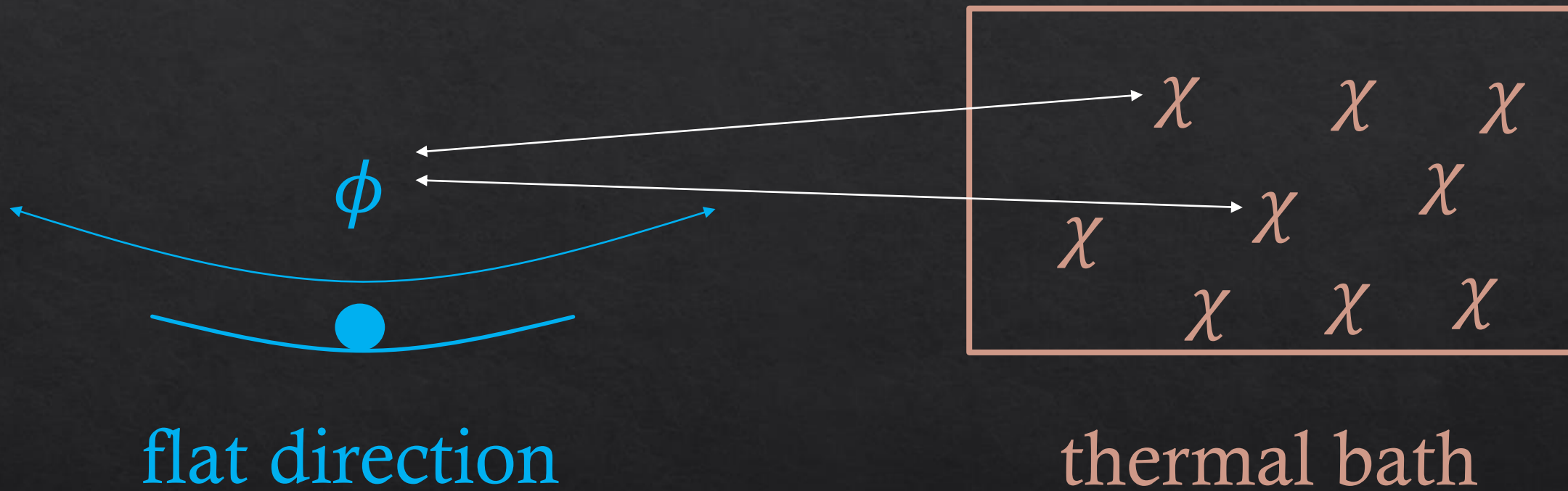


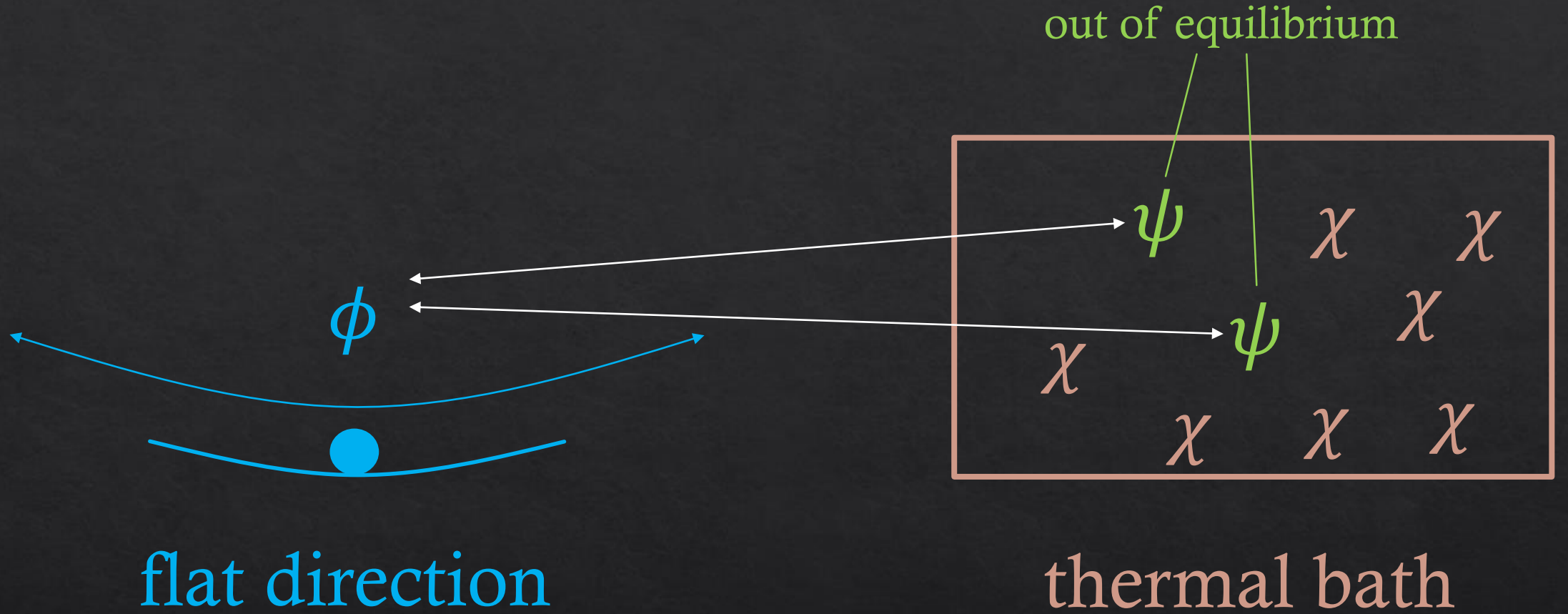


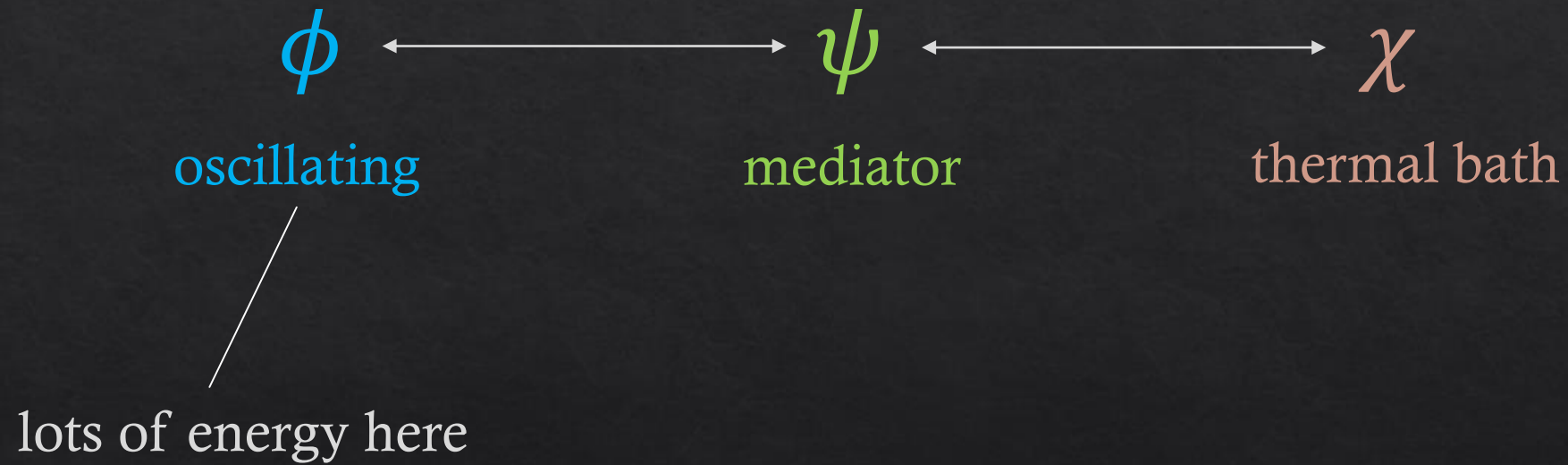
flat direction



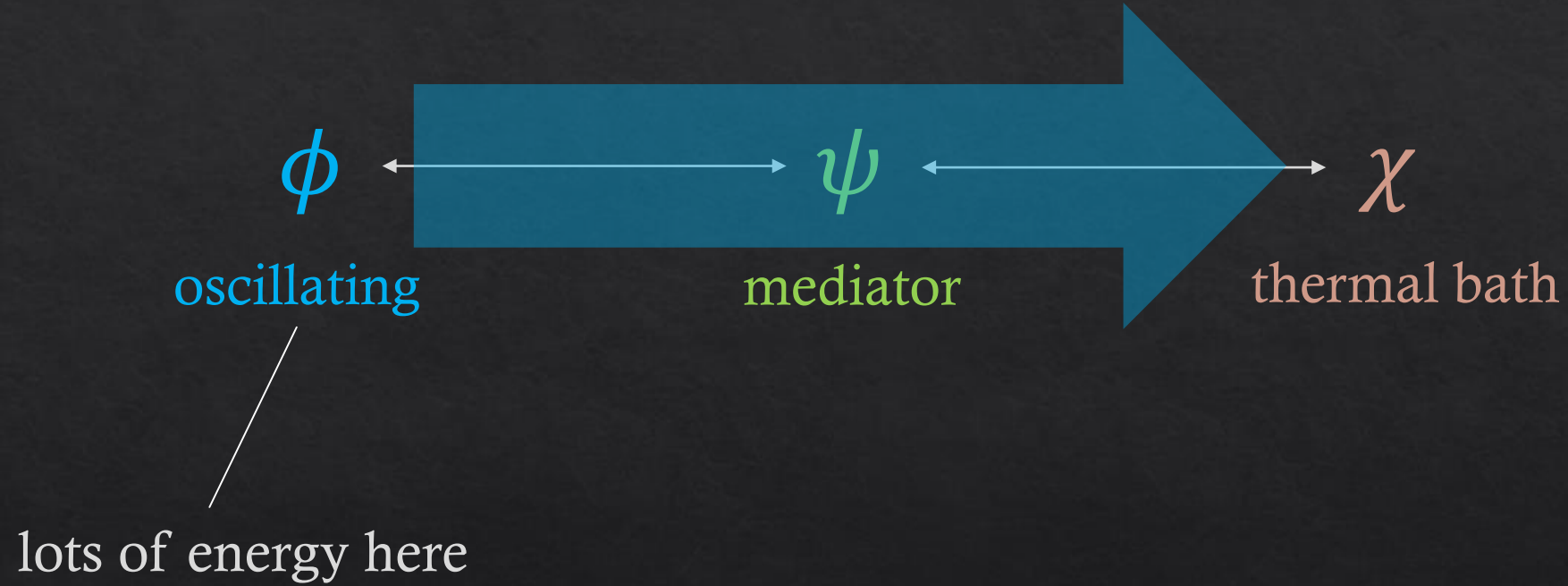
thermal bath







“mediated damping”



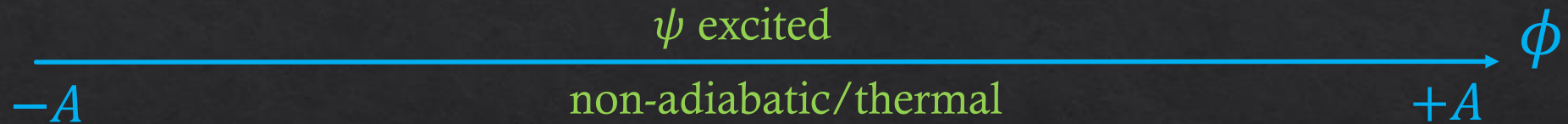
Mediated Damping



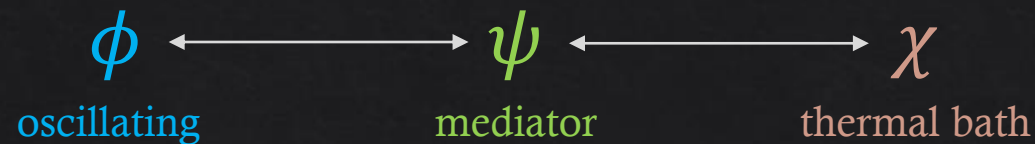
$$m_{\psi,\text{eff}}^2(t) = m_{\psi}^2 + m_{\psi,\text{th}}^2 + \lambda^2 \phi^2$$



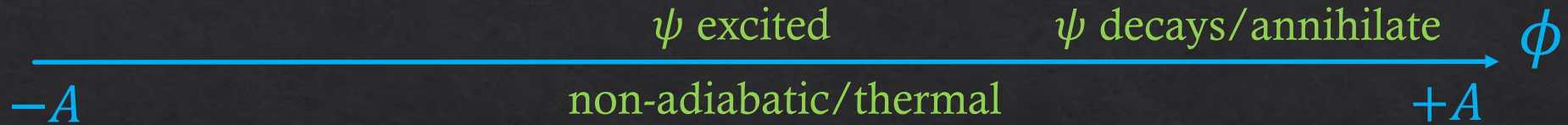
Mediated Damping



$$m_{\psi,\text{eff}}^2(t) = m_{\psi}^2 + m_{\psi,\text{th}}^2 + \lambda^2 \phi^2$$



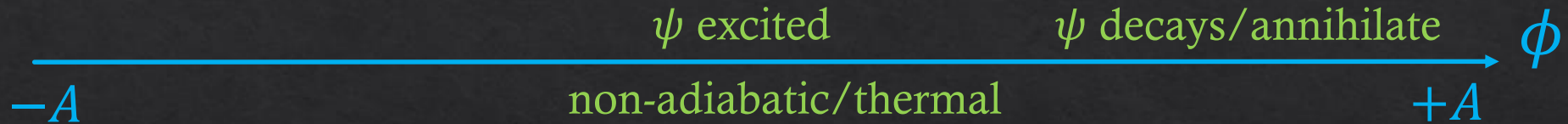
Mediated Damping



$$m_{\psi,\text{eff}}^2(t) = m_{\psi}^2 + m_{\psi,\text{th}}^2 + \lambda^2 \phi^2$$

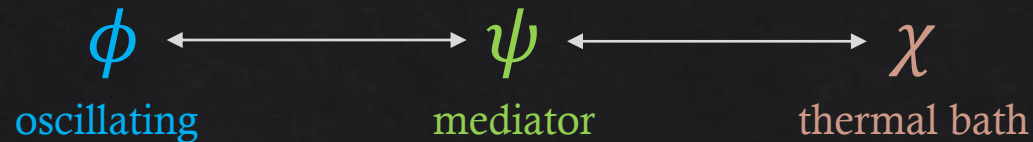


Mediated Damping



$$m_{\psi,\text{eff}}^2(t) = m_{\psi}^2 + m_{\psi,\text{th}}^2 + \lambda^2 \phi^2$$

Energy taken from ϕ and then dumped to χ



Thank You