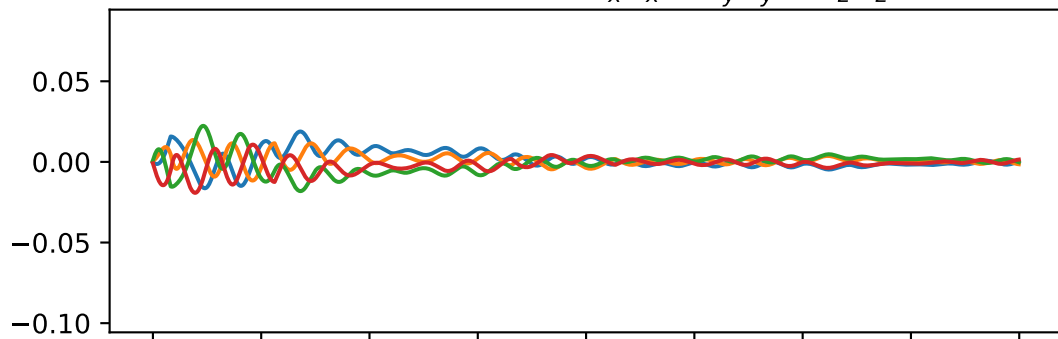


D=1 no chaos:  $H = S_x^1 S_x^2 + S_y^1 S_y^2 + S_z^1 S_z^2$



D=1 chaos:  $H = S_x^1 S_x^2 + S_y^1 S_y^2 + S_z^1 S_z^2 + S_x^1 - S_z^2$

