



Correct PDE

$$\begin{aligned} u_t + (uu_x + vu_y) &= -p_x + 0.01(u_{xx} + u_{yy}) \\ v_t + (uv_x + vv_y) &= -p_y + 0.01(v_{xx} + v_{yy}) \end{aligned}$$

Identified PDE (clean data)

$$\begin{aligned} u_t + 0.997(uu_x + vu_y) &= -p_x + 0.01064(u_{xx} + u_{yy}) \\ v_t + 0.997(uv_x + vv_y) &= -p_y + 0.01064(v_{xx} + v_{yy}) \end{aligned}$$

Identified PDE (1% noise)

$$\begin{aligned} u_t + 0.998(uu_x + vu_y) &= -p_x + 0.01056(u_{xx} + u_{yy}) \\ v_t + 0.998(uv_x + vv_y) &= -p_y + 0.01056(v_{xx} + v_{yy}) \end{aligned}$$