

Correct PDE 
$$\begin{aligned} u_t + (uu_x + vu_y) &= -p_x + 0.002(u_{xx} + u_{yy}) \\ v_t + (uv_x + vv_y) &= -p_y + 0.002(v_{xx} + v_{yy}) \end{aligned}$$
 Identified PDE (clean data) 
$$\begin{aligned} u_t + (uu_x + vu_y) &= -p_x + 0.002(v_{xx} + v_{yy}) \\ u_t + 0.983(uu_x + vu_y) &= -p_x + 0.00198(u_{xx} + u_{yy}) \end{aligned}$$

 $v_t + 0.983(uv_x + vv_y) = -p_y + 0.00198(v_{xx} + v_{yy})$