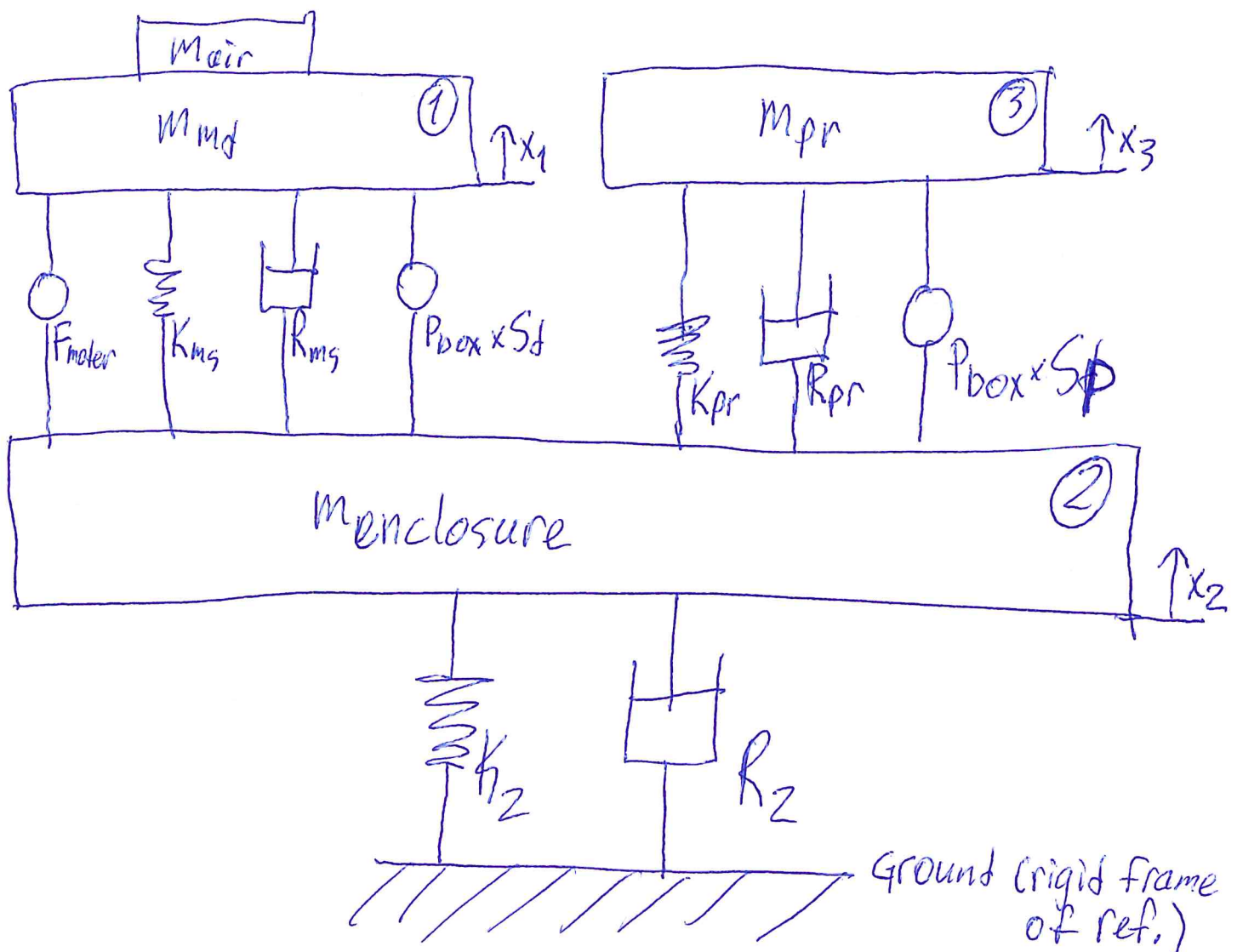dof1 = diaphragm

dof2 = enclosure

dof3 = passive radiator / bass vent

Pbox = air pressure in box

Fmotor = net force from speaker motor

$$P_{box} = P_0 \cdot \gamma \cdot \frac{S_d \cdot x_1 + S_{pr} \cdot x_3}{V_b}$$

$$F_{motor} = \frac{V_{source} - Bl(\dot{x}_1 - \dot{x}_2)}{R_e + R_{series}} \cdot Bl$$