$$F_{tr} = F_{aero} + F_i + F_{grade} + F_{rr}$$

$$F_{aero} = 1/2\ \rho\ C_d\ A_f\ V^2 \qquad F_{rr} = m\ g\ C_{rr}$$

$$a = (F_{tr} - F_{aero} - F_{grade} - F_{rr}) \div m_i \qquad F_{grade} = m\ g\ \sin(\theta)$$