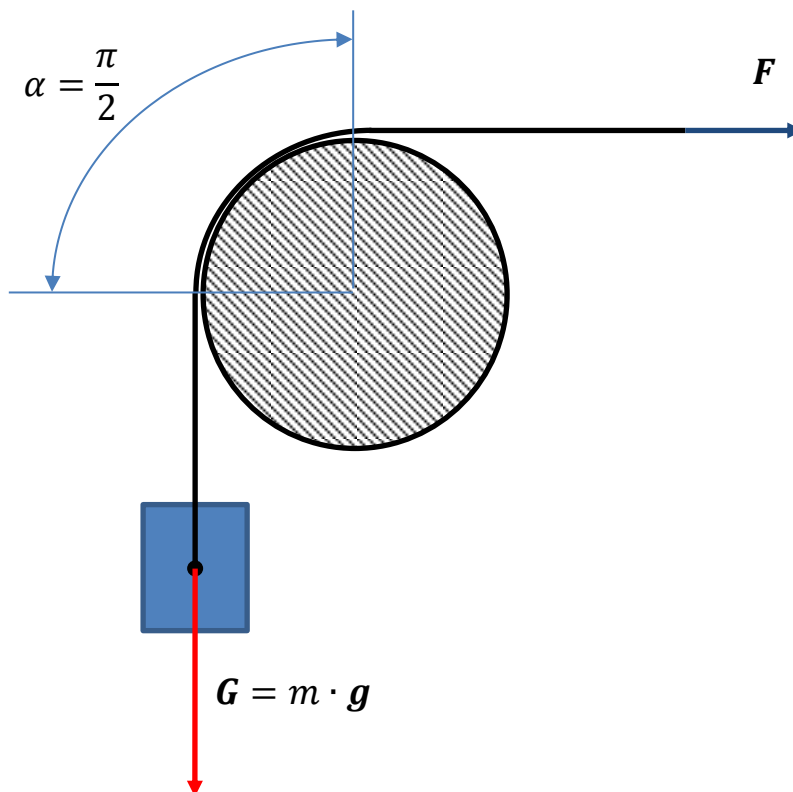## Mechanics statics – friction of cables

Cable is rolled around unmovable roller. We assume that cable is massless. Weight with mass m is hanged at the one of cable ends. Sliding friction exists between roller's surface and cable. Sliding friction is described and sliding friction factor μ. Cable is rolled around roller on the one quarter of its circuit. Roller cross-section is a wheel. Force F has to designated. Force F is responsible for keeping system in equilibrium.

$$F = G \cdot e^{\mu \cdot \alpha}$$

$$F = m \cdot g \cdot e^{\mu \cdot \alpha}$$