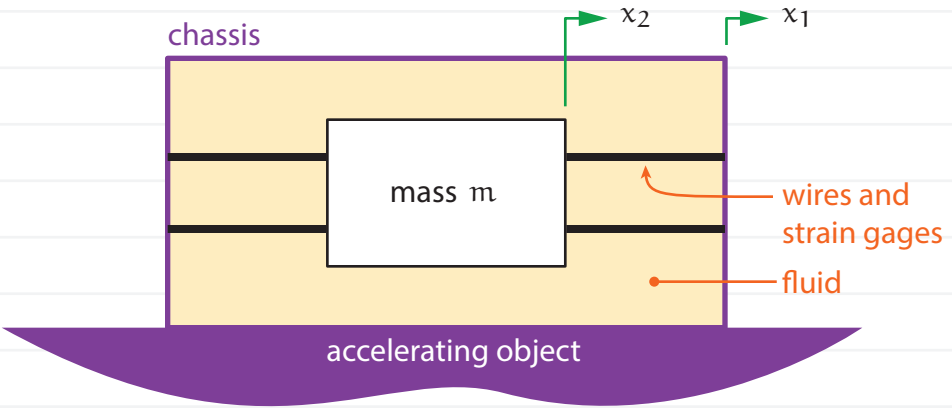
Resistive accelerometers

A resistive accelerometer connects a small mass to a chassis via thin wires, as shown in the schematic.



As the chassis accelerates — we are trying to measure this acceleration — it exerts a force on the wires. This puts the wires on one side in further tension and those on the other in lesser tension. The mass reacts to the wire forces, which are spring-like. If we measure the strain-changes in the wires, we have an estimate of the forces, from which we can estimate the acceleration of the object to which the accelerometer is attached.

Analysis