**Seismic and gravity-gradient noise**

1. Introduction
2. Ambient ground motion
   1. Slow ground motion in hard rock, soft soil and salt
   2. Seismic motion
      1. Microseismic noise
      2. Cultural noise
      3. Wind noise
      4. Mathematical principle of seismic motion
   3. Geological and geographic dependence
3. Seismic noise characterization studies
   1. Experience from specific sites: LIGO, Virgo, Geo and CLIO (including seismic correlation measurements)
   2. Impact on low-frequency sensitivity
      1. Required vibration isolation performance
4. Gravity gradient noise
   1. Mathematical background
   2. Gravity gradient noise modeling
      1. Ambient Rayleigh wave models
      2. GGN and Advanced detectors
      3. Finite element modeling
5. Outlook for third generation detectors
   1. Results from a worldwide survey for underground detectors
   2. Gravity gradient noise subtraction with sensor networks
   3. Sensor development
6. Conclusion