



BlueSeis3A - full characterization of a 3C broadband rotational ground motion sensor for seismology

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In this contribution we present a full characterization of the first three component interferometric fiber-optic gyroscope (IFOG) especially designed for the needs of seismology. The sensor is called BlueSeis3A and is manufactured by iXBlue, France. It is developed in the framework of the European Research Council Project, ROMY (Rotational motions – a new observable for seismology). To fully explore the benefits of this new seismic observable especially in the fields of volcanology, ocean bottom seismology and geophysical exploration, a portable rotational motion sensor has to fulfill certain requirements regarding dynamic range, portability, power consumption and sensitivity to changes in ambient temperature and magnetic field. For BlueSeis3A, power consumption is in an acceptable range for a portable and field deployable instrument. We will quantify sensor self noise by means of operating range diagrams as well as Allan variance and show results from tests on thermal and magnetic sensitivity. Tests on orthogonality and sensitivity to linear motion complete our full characterization.