

## DETERMINATION OF IONOSPHERIC MODELS USING GLOBAL NAVIGATIONAL SATELLITE SYSTEMS AND BERNESE GNSS SOFTWARE

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Since the last few decades of the 20th and the beginning of civilian application of NAVigation Satellite Timing And Ranging Global Positioning System (NAVSTAR GPS) established by the United States Department of Defense, satellite positioning is the most widespread technology for position determination on any place in the Earth's surface (Hofmann-Wellenhof et al., 2008). Besides positioning, a Global Navigation Satellite Systems (GNSS; a common name for all operational navigation systems worldwide) technology is used for other research applications such as atmospheric parameter estimation, i.e., ionospheric determination (Seeber et al., 2003). This paper presents the possibility of the GNSS technology as a tool for determining ionospheric models by the Bernese GNSS Software (Dach et al., 2015). Bernese supports three types of models to represent the ionosphere: local models based on Taylor series expansions, and station-specific and global (or regional) models based on spherical harmonic expansions (Schaer, 1999). Mentioned Ionospheric models (also called Ionospheric maps) can be produced in Bernese ION format or as a common data-exchange IONosphere EXchange (IONEX) format (Schaer et al., 1998). Based on these formats, it is possible to determine the quantity that characterizes the current state of the ionosphere, the so-called Total Electron Content (TEC).

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