

## Extraction of Geomagnetic Field from KOMSAT-1 Three-Axis Magnetometer Data

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**ABSTRACT:** The Earth's magnetic field acquired from KOMPSAT-1's TAM (Three-Axis Magnetometer) between June 19th and 21st, 2000 was analyzed. The TAM, one of the KOMPSAT-1's Attitude and Orbit Control Subsystems, plays an important role in determining and controlling the satellite's attitude. This also can provide new insight on the Earth's magnetic field. By transforming the satellite coordinate from ECI to ECEF, spherical coordinate of total magnetic field was achieved. These data were grouped into dusk (ascending) and dawn (descending) data sets, based on their local magnetic times. This partitioning is essential for performing 1-D WCA (Wavenumber Correlation Analysis). Also, this enhances the perception of external fields in the Kompsat-1's TAM magnetic maps that were compiled according to different local. The dusk and dawn data are processed independently and then merged to produce a total field magnetic anomaly map. To extract static and dynamic components, the 1-D and 2-D WCAs were applied to the sub-parallel neighboring tracks and dawn-dusk data sets. The static components were compared with the IGRF, the global spherical harmonic magnetic field model. The static and dynamic components were analyzed in terms of corefield, external, and crustal signals based on their origins.