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# Spherical Data Processing for Brain Shape Analysis

**Ilwoo Lyu**

Pohang University of Science and Technology (POSTECH), Korea

Brain shape analysis plays a key role in understanding brain development, degeneration, and their links to cognitive and behavioral functions. However, the anatomical variability of the human brain poses significant challenges to traditional 3D shape analysis techniques. This talk will focus on brain shape processing techniques that utilize spherical mapping. By simplifying the brain's complex geometry, spherical mapping can overcome challenges faced by traditional 3D shape analysis techniques. The produced spherical data can be applied to a wide range of tasks, including brain surface annotation, shape correspondence, and data augmentation. We will explore these processing techniques on spherical data in depth and conclude with a discussion on the challenges, opportunities, and future directions for research in brain shape analysis.

*Keywords:* *Brain shape analysis, Spherical mapping, Brain surface processing*