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Solar Coronal Topological Activity and Global Weather Patterns

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Mathematical and topological methods are used to define and describe solar coronal activity; observed as coronal mass ejections, solar flares and coronal holes.

The associated variations of the plasma, magnetic field, particle flux, UV-, EUV-, and X-ray radiation are then related to changes of global weather patterns.

The global weather patterns, North Atlantic Oscillation (NAO), Artic Oscillation (AO), and Pacific Decadal Osciallltion (PDO), are also analyzed with wavelet techniques.