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Networks and climate: are they a good match?

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Our world is a wonderful collection of different types of networks, from biological to economic to social. One of the great virtues of networks is their simplicity; they model systems as being made up of components with links between them. Analysis measures, including degree, betweenness, and link length, can reveal important patterns and underlying structures of the system, while making very few assumptions about the system's behavior. So how can we use networks in the geosciences? One way is to use network theory to model parts of the Earth's climate system, including the ocean and atmosphere. These so-called "climate networks" can be constructed from, among others, rainfall, pressure, and temperature data, and are showing great potential as a tool for understanding our Earth's complex climate system.