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*Searching for the Shortest Network*

Suppose you are given some set of cities and you would like to connect them all together with a network having the shortest possible total length. How hard is it to find such a shortest network? This classical problem has challenged mathematicians for nearly two centuries, and today has great relevance in such diverse areas as telecommunication networks, the design of VLSI chips and molecular phylogenetics. In this talk, I will summarize past accomplishments, present activities and future challenges for this fascinating topic.