From the hot big bang to the coldest temperatures ever achieved

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This talk is a journey from the big bang to the lowest temperatures ever achieved. After an introduction into the concept of temperature, our journey takes us from the earth to the sun and to temperatures of a trillion Kelvin, which are generated in heavy ion collisions and simulate conditions ten millionths of a second after the big bang. The lowest temperatures are a trillion times colder than room temperature and provide new insight into superfluidity and other forms of ice-cold matter.