# CHEMICAL EVOLUTION OF THE SOLAR SYSTEM THROUGH METEOR SPECTRA

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Through meteors observation, physical and chemical properties of cometary meteoroids can be studied indirectly from the details of their interaction with the Earth's atmosphere. Spectroscopic observations are possible to reveal not only chemical composition of the interplanetary dust but also emission processes of hypervelocity collisions to the atmosphere, which are difficult in laboratory experiments. We observed the Leonid meteor shower from NASA's Leonid Multi-instrument Aircraft Campaign(Leonid MAC) on November 16-19 in 1999. High resolution spectra were obtained during the three night flights. We show many identified atoms and molecules in those meteor and meteor train spectra. Chemical evolution and the organic material related with the parent comet Tempel-Tuttle are also discussed.