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Possible detection of atmospheric Lamb waves generated by the Chelyabinsk meteor

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We have detected a very low frequency pressure waves having period of 5 - 10 minutes at 4 barometric observation sites in Japan about 5 hours after the entry of the Chelyabinsk meteor. Because of the similarity of the wave form and phase if we take into account the arrival time difference caused by the difference in the distance between Chelyabinsk and observation site, we guess that they may be the Lamb mode acoustic waves generated by the Chelyabinsk meteor. We examine the details of their characteristics and compare with the pressure waves in the past events such as the Tunguska explosion or the nuclear bomb experiments in the atmosphere.

Keywords: Micro-barometric variation, atmospheric Lamb wave, meteor