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Pc3 pulsations during low density events

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We study the generation of Pc3 geomagnetic pulsations (22 – 100 mHz) measured at Tihany, Hungary during intervals of very low solar wind (SW) proton density (low density events - LDE's) when $N_p \approx 1/\text{cc}$. We know the main SW based drivers of Pc3's are SW velocity and interplanetary magnetic field (IMF) direction. However, it is observed that under very low SW density pulsation activity measured on the ground is paused, regardless of otherwise favourable conditions. A simple statistical study is performed to show the dependence of pulsation activity on N_p , and we estimate a threshold N_p , below which pulsations cease. Furthermore we use the growth rate of the ion beam instability, that generates the ULF waves upstream of the bow shock (which drive Pc3's), to explain the observed dependence of Pc3 pulsations on solar wind density.

Level (Hons, MSc, PhD, other)?

PhD

Consider for a student award (Yes / No)?

Yes

**Would you like to
 submit a short paper
 for the Conference
 Proceedings (Yes / No)?**

No

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