Denitrification and mixing in the arctic winter

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Denitrified air in the arctic vortex of 1996/1997 could be identified by using HNO3, N2O, and aerosol extinction at 780nm had been measured by ILAS. In mid-February, the denitrification were observed in only high PV region and Atlantic side inside the polar vortex. In late-February, they were also observed in low PV region and Pacific side. Since the magnitude of denitrification dependency on PV in late-Feb. was higher than in mid-Feb., denitrified air had been diffused uniformity along equivalent PV line. The HNO3-N2O correlation suggest that high and low PV air inside the vortex had been mixed. The correlation in March and April only depended on altitude. These facts support mixing inside the polar vortex took place.