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Long term ozonesonde observations at Marambio, Antarctic Peninsula

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The ozonesonde measurement program at Marambio was established in late 1980s, soon after the discovery of the Antarctic ozone hole. The Marambio Antarctic Station is located in an island at the North-East of the Antarctic Peninsula, surrounded by Weddell Sea (at 64º 14 ′S, 56º 38′W 198 m.a.s.l). The location is suitable for observing Antarctic ozone hole. In addition to the springtime measurements we have also performed regular soundings during other seasons. The soundings have been made by electrochemical concentration cell ozonesondes, using a potassium iodide solution. The sounding system at Marambio is DigiCORA III from Vaisala and the radiosondes are Vaisala RS92-SGP. The sondes measure ozone profiles from surface up to the altitude of 30-35 km. The effective altitude resolution is 100-150 meters. Uncertainty of the stratospheric ozone measurements is about 5 %. In this study we present results of the long term measurements. The time series have been recalculated using the knowledge from dual ozonesonde experiments. Some results show high variability in the different layers of the atmosphere during the ozone hole season. The ozonesonde observations are also compared to the available total ozone measurements by a ground based Dobson instrument at Marambio and by satellite borne instruments.