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Behaviour of the “Ozone hole” over the Antarctic Zhongshan station in the past decade revealed by the measurements of Brewer#074 and satellites

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Brewer#074 has been deployed at Zhongshan (69.37S, 76.38E) since 1993 for the long-term observations of total ozone and spectral UVB irradiance. In this workshop, we report the investigation result of the seasonal “ozone hole” at the site by the observations made with the Brewer spectrophotometer and from satellites. The good agreement between total ozone values from satellites and Brewer observations is noticed. A general decreasing trend of total ozone during the 1993-2006 time period is observed, and the main contribution to this reduction is from measurements taken during October and November, the seasonal “ozone hole” period. Abnormally low and high total ozone values occurred in August-December of 2001 and 2002, respectively, reflecting the inter-annual variations of the “ozone hole” over the south-eastern part of Antarctica. The favourable meteorological conditions, such as the extremely low temperature in the stratosphere, polar stratospheric clouds, and the persistence of the polar vortex are the requirements for the ozone depletion over the site.