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Measuring the Tropospheric Ozone Minimum in the Tropical West Pacific

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The West Pacific warm pool has been identified as the major source region for stratospheric air, coinciding with a tropospheric ozone minimum (Rex et al. 2014). The close coupling of ozone concentration and oxidizing capacity of the clean tropical troposphere thus influences the overall transport of chemical species to the stratosphere.

To improve the limited availability of tropospheric ozone profiles from this key region, intensive campaigns and continuous measurements with ECC ozone sondes are conducted at a new measurement station in Palau (7° N, 135° E) within the scope of the EU-project StratoClim until 2018. We present insights from the first campaigns in January/February and July/August 2016 and measurements with a new device to monitor the background current of ECC ozone sondes in flight. This sonde modification lowers the instrumental detection limit and improves measurements at mixing ratios below ~15 ppbv. Furthermore, the overall understanding of this yet controversial bias will be improved (Vömel and Diaz, 2010).