# Variability of mesospheric OH layer volume emission profiles derived from SABER limb measurements

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Mesospheric OH radiance limb profiles measured by SABER instrument aboard the TIMED spacecraft were inverted to yield altitude profiles of OH volume emission rates (VER). The inversion was performed using the Abel transform and a tomographic technique, with nearly identical results. The inversion results were analyzed for the layer variance as a function of latitude, local time and season. The results of this analysis show that the profiles exhibit peak variance at heights lower than the mean peak of VER, over an altitude range with less thickness than the mean layer. These results are similar to the predictions of wave effects on the layer, as modeled by Liu and Swenson (2003). These variations from the mean are likely caused primarily by tides and atmospheric gravity waves, and hence their characterization can be used to derive wave parameters.