



Narrowband emission observed near a Saturn kilometric radiation source region

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The Cassini spacecraft flew very near a source region of Saturn kilometric radiation (SKR) at high latitudes on day 73 of 2008. The radio and plasma wave instrument, RPWS, observed dominant X-mode emission but also narrowband (NB) emission near the cyclotron frequency ($f_c \sim 5\text{kHz}$). The NB emission is composed of both Z-mode ($f < f_c$) and O-mode emission. We investigate the cyclotron maser instability as a possible source mechanism for each of these emission modes using the observed electron plasma distribution. We also suggest alternative explanations for the coincidence of the X-mode and NB emission.