# A search for($CO_2$-$CO_2$) dimers in the atmosphere of Venus

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The first detection of extraterrestrial dimers was announced by Frommhold et al. (1984), who used Jupiter's infrared spectra obtained with the Voyager IRIS (Infrared Interferometer and Spectrometer), and noted diminutive absorption features of $H_2-H_2$ dimers at 350 and 580 $cm^{-1}$. Kim et al. (1995) had detected $H_2-H_2$ absorption lines at 2 microns using a ground-based infrared telescope. Dimers are expected to be abundant in the atmospheres of Venus, Jupiter, and other planets. Their mole fractions were estimated by Kim et al. on the basis of thermodynamic considerations. The spectra of dimers in the planetary atmospheres, emitted by pure rotational transitions, are in the range of radio wavelengths. We, therefore, conducted the first attempt of radio observations at 2 and 3 mm to search for $CO_2-CO_2$ dimer lines in the atmosphere of Venus in December, 1997, and March and April, 1998 with the TRAO(Taeduk Radio Astronomy Observatory) 14-m radio telescope using two $256\times1MHz$ and $256\times250KHz$ filter banks. To verify lines and spectral features, detailed data reductions are now underway. We will present the current status of the radio investigation on the $CO_2-CO_2$ dimers.