

## SEARCH FOR A VARIATION OF THE PROTON-ELECTRON MASS RATIO FROM METHANOL OBSERVATIONS

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A limit on a possible cosmological variation of the proton-to-electron mass ratio  $\mu$  is derived from observation of methanol lines in the PKS1830-211 lensed galaxy at redshift  $z \sim 0.89$  with the Effelsberg 100 m single-dish radio telescope (at frequencies 6.5 - 32 GHz), the IRAM 30 m telescope (at frequencies 80 - 160 GHz), and band-6 of the novel ALMA telescope array (at 260 GHz). Ten different absorption lines of CH<sub>3</sub>OH are detected covering a wide range of sensitivity coefficients  $K_\mu$ . Systematic effects of chemical segregation, excitation temperature, frequency dependence, and time variability of the background source are quantified. A robust constraint of  $\Delta\mu/\mu = (1.0 \pm 0.8_{stat} \pm 1.0_{syst}) \times 10^{-7}$  is derived from this large sample of lines belonging to a single molecular species. Analysis of additional observations at the E-VLA radio telescope is under way.