APR08-2008-000158

Abstract for an Invited Paper for the APR08 Meeting of the American Physical Society

## Elastic form factor measurements at Mainz. THOMAS WALCHER, Mainz University

The precision of measurements of the form factors of the nucleon has greatly improved over the last decade. At large fourmomentum transfers  $Q^2$  the new investigations at Jlab have shown highly significant deviations from the celebrated dipole shape considered until recently as a prove of the vector dominance model. At low  $Q^2$  the possibility of a long wave length bump/dip structure has stirred a controversy. In a visual picture in the Breit frame such a structure would indicate a charge contribution extending out to radii larger than 1 fm at variance with some popular models of the nucleon. But, such a charge would also be in clear contradiction to the best dispersion relation description. In this talk a summary of this situation will be given and new yet unpublished results from the Mainz Microtron MAMI for the electric form factor of the proton aiming at a clarification of the bump/dip structure will be presented. It shows that the low as well as the high  $Q^2$  data are important for the study of the long distance structure of the nucleon.