

Meeting: 1003, Atlanta, Georgia, MAA CP T1, MAA Session on Mathematics Experiences in Business, Industry, and Government

1003-T1-749 **Marcus Pendergrass*** (Marcus.Pendergrass@ConvergentAnalysis.com), 808 High Street,
Farmville, VA 23901. *A Channel Model for Ultrawideband Radio Networks.*

We present a channel model for indoor short range ultrawideband (UWB) radio channels. The model was developed in 2002-2003 through an industrial/academic collaboration under the auspices of the IEEE 802.15.3a standards task group, for the purpose of aiding in the development of a standard for UWB wireless personal area networks (WPANs). The model is based upon the well-known Saleh-Valenzuela model, but with fading statistics modified to more accurately represent the phenomenology associated with ultrawideband signals. We discuss several sets of measurement data that were factored into the model formulation, as well as the potential impacts of various propagation effects on system design. (Received September 29, 2004)