

### ***S3.2.1 Whole House Filtration: Performance Versus Expectations***

Chrystal Jolliffe

Columbus Industries, Inc

This presentation will show results of a field study evaluation of a residential HVAC system's airflow during the various operating modes and how the level of filtration can be different than what was expected. Airflow changes during operation in a residential HVAC system alter the efficiency of the filter differently if it is an electrostatic filter or a mechanical filter. Mechanical filters tend to have lower efficiency at lower airflow and electrostatic filters tend to have higher efficiency at lower airflow. Residential HVAC systems do not typically run at the airflow levels at which these filters are rated. In addition the change in filter efficiency over time will be presented and compared to laboratory conditioning methods. Lastly the filters impact on the system will be presented comparing various filter models with different pressure drops and their impact on the level of output of the system.