ENERGY USAGE AND AIR FILTERS FOR INDOOR AIR QUALITY

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In indoor spaces, air filters are the primary means cleaning the supplied air. In designing systems for clean air delivery, a frequent question is, “what is the best option”? Higher efficiency filters will always result in cleaner air supply. However, this may not be the best solution, since higher efficiency filters have higher resistances, and hence energy consumption. With ever tighter buildings, the demand for clean air is increasing the energy demands for indoor air worldwide. This lecture presents an analytical approach for selecting the lowest energy system that will deliver the desired clean air. The best option may not be the lowest, or the highest efficiency filters. The goal of the paper is to assist the professional to consider a solution based on filter and fan performance data rather than empirically.