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SRS Abstract Draft

In virology, mathematical models are often deployed to examine and test various behaviors of viruses. For example, one for the flu it is speculated that lethality is linked to the virus's ability to propagate down the trachea, specifically in how ciliated cells push virus up through mucous layers in a process known as advection. We propose a model for this process, believing that this model can reveal links and critical points between lethality and advection. To solve this model, we utilize three techniques: Laplacian transform, non-linear analysis, and quasi-state analysis. We discuss the findings of each method.