# NUMERICAL STUDY OF BIFURCATING FLOW AND PARTICLE DEPOSITION IN HUMAN UPPER AIRWAYS

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**Abstract**

In the previous Study the respiratory flow characteristics in a three and more than up to 11th generation symmetric bifurcation airway have been numerically investigated using a finite control volume method to solve the fully three dimensional polar form laminar Navier-Stokes equations. The present paper extends the work to deal with asymmetric airways extracted from the 11-23rd generations of the model of weible's (1963) in order to more appropriately model human air passage. The Parent airway segment is modeled as a smooth circular tube as well child segments. This paper aims to improve current understanding of airways (infected through any lung disease). For this study we used numerical method to solve such type of non-linear three dimensional Navier-stokes equations. For the flow of oxygen up to higher branches or airways. The range of Reynold's number we take 1600-2500. There is a good agreement between our numerical analysis and available experimental data for normal (or infected by asthma) lung disease.

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