Characterizing phonatory aeroacoustic sources using Lagrangian Coherent Structures MICHAEL MCPHAIL, MICHAEL KRANE, Penn State University — Voice disorders that lead to changes in vocal fold geometry, or posturing, are known to substantially affect phonatory airflow topology. How these topology changes affect aeroacoustic sound sources is not well understood, however. This talk presents modelling aeroacoustic sources with Lagrangian Coherent Structures (LCS). Here we use the motion of dynamically distinct fluid regions, identified by the LCS, to predict sound. This approach provides a means to connect phonatory airflow topology changes to resulting changes in sound production. Simple validation cases of this approach will be shown. The application of LCS analysis to phonatory flows will be also presented.

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Date submitted: 05 Aug 2014   Electronic form version 1.4