

## **Air Traffic Complexity Versus Control Workload**

This paper presents a new air traffic complexity metric based on dynamical systems. Based on a set of radar observations (position and speed) a vector field interpolating these data is constructed. Once the field has been obtained, the Lyapunov spectrum of the associated dynamical system is computed on points evenly spaced on a spatial grid. The results of the computations are summarized on complexity maps, with high values indicating areas to avoid or to carefully monitor. A first approach based on linear dynamical system enables to compute an aggregate complexity metric. In order to produce complexity maps, an extension of the previous approach have been developed. Based on such complexity metric, a control workload predictor has been developed validated on a real operational airspace.