



~~Observations~~ from the Traffic Flow Optimization Track

Amy Pritchett






Questions from the Traffic Flow Optimization Track

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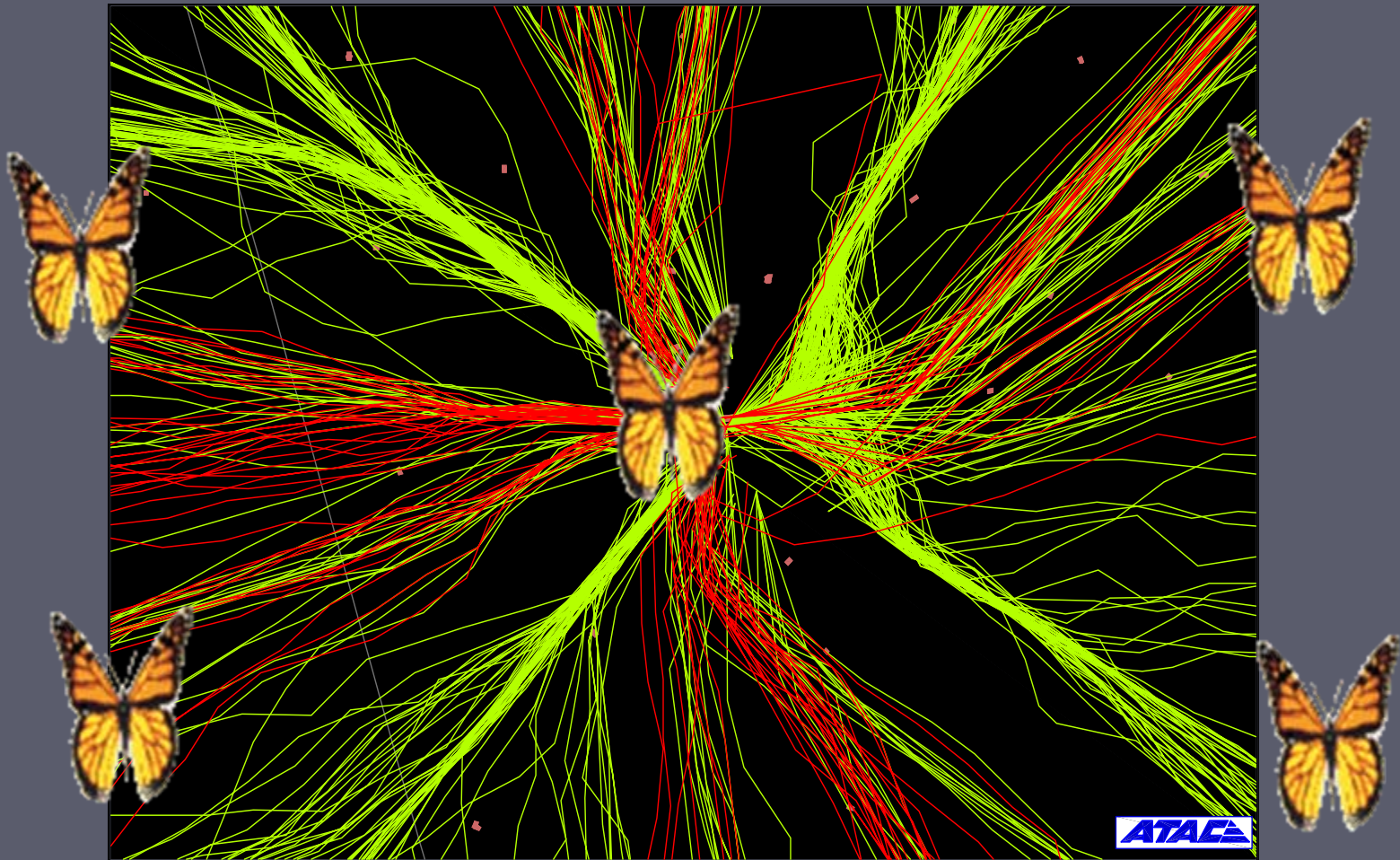
What is Traffic Flow?

- ▶ Trajectories
- ▶ Routes / ribbons / tubes
- ▶ Arrival slots / arrival times
- ▶ Flight schedules

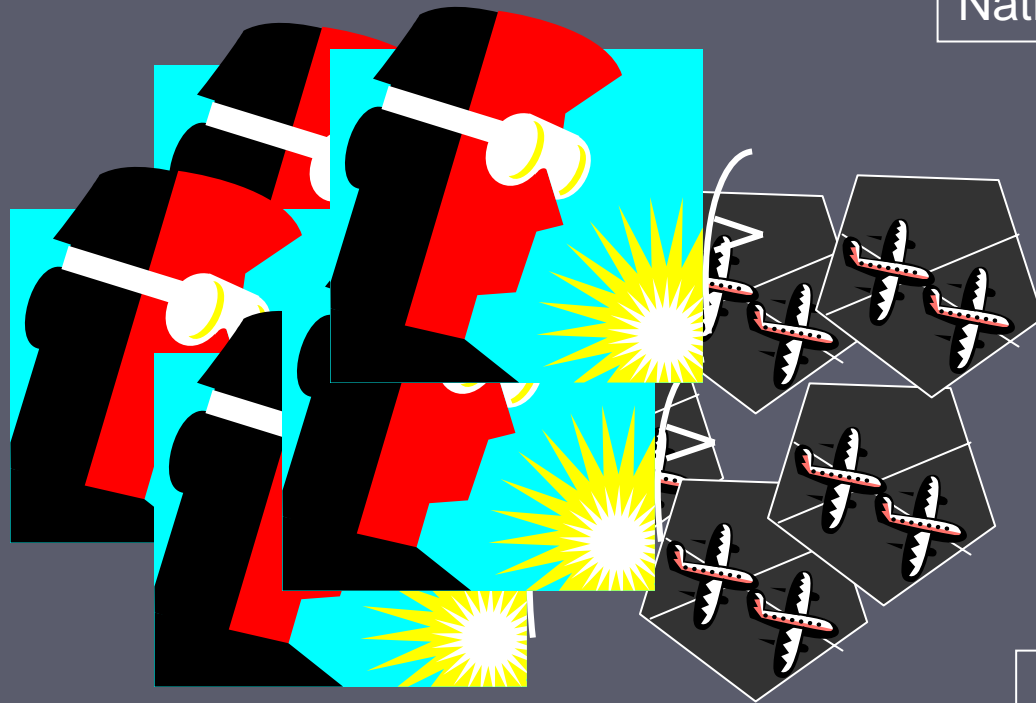
How Do We Model Traffic Flow?

- ▶ Continuous trajectory  Flight dynamics
 - Needs to avoid conflicts, winds, weather
- ▶ Traffic network  Network / graph
 - Needs to not overload network elements
- ▶ Arrival / departure schedule  OR / Logistics
 - Schedule needs to be “robust” and “flexible”
 - Schedule needs to be “maintained”

Some Decomposition Is Needed...



What Is the Right Decomposition?

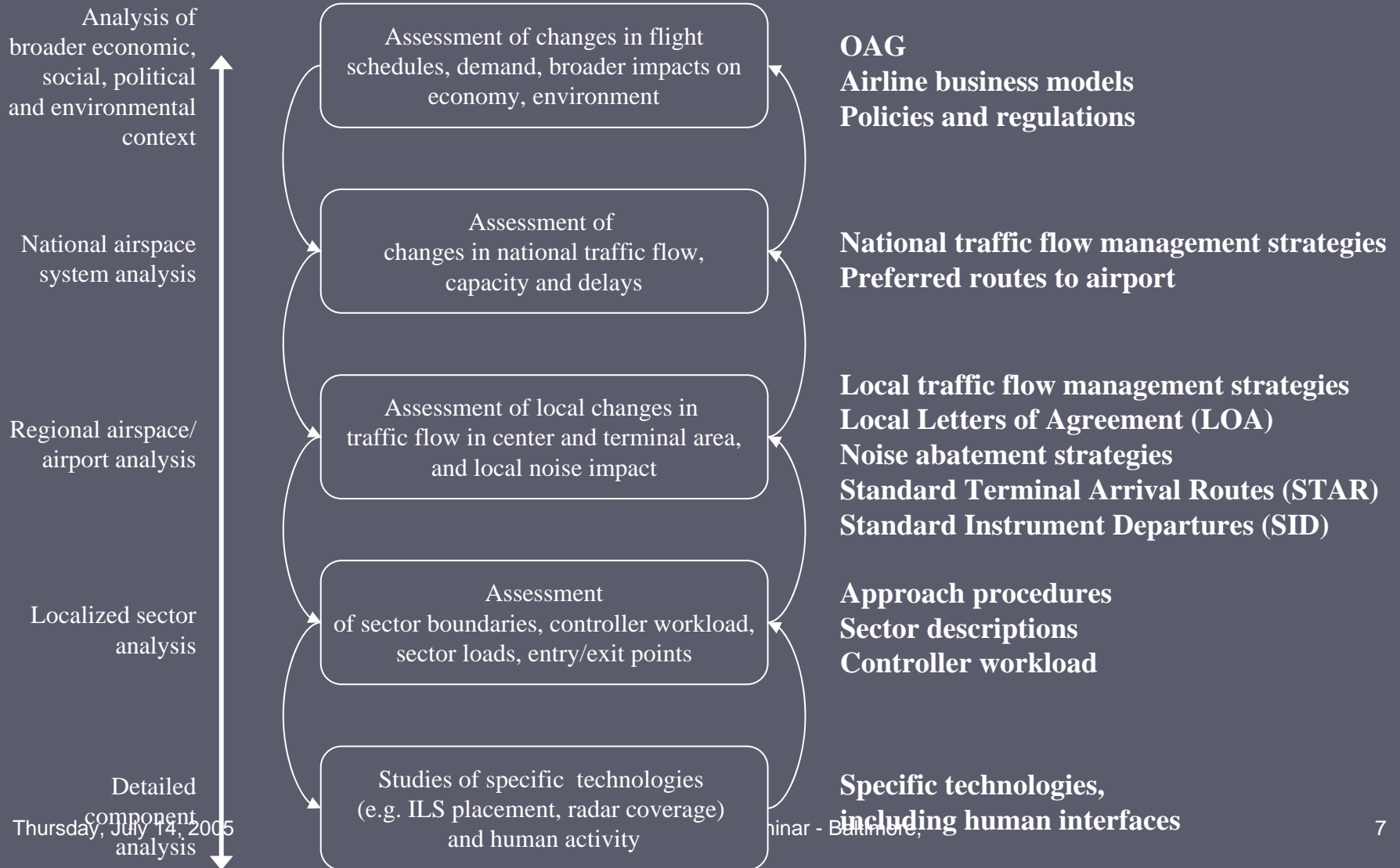


National Traffic Flow

Airline Operations

Airline Scheduling

What Is the Right Decomposition?



Remaining Challenges: Battling Complexity

- ▶ Decomposition of the problem
 - For modeling and for operation
- ▶ Integration of the communities
 - Approaches, objectives, vernacular
- ▶ Range of concerns and models
 - Engineering, human factors, economic, policy