



# Comments on “Interleaving Temporal Planning and Execution for an Autonomous Rover”

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Pasadena, California, USA

June 23--25, 2004

The research described in this talk was carried out at the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



# My Background

- Have worked at JPL for over 25 years
  - Developed software for use in uplink operations
- On Mars Exploration Rover (MER) Project, was a Tactical Activity Planner



# Impressions

- The paper has a good objective
  - “combine deliberative planning, plan repair and execution control that takes into account resource level updates and temporal constraints”
- This objective has solid practical applications to an autonomous rover
- Temporal considerations are essential for real-life rover applications
- Simple Temporal Network is probably adequate for numerous applications



# More Impressions

- It would be good to understand this system well enough to be able to list scenarios in which it would work well, and some where it wouldn't
- Example: What sorts of scenarios would allow the plan repairing that is distributed over several cycles to complete, without having an intervening message (e.g.) that causes a complete replan to be needed.



# Possible Future Actions

- Performance (speed, and memory usage) is always of practical concern. Experiments that would allow measuring performance would be helpful
- See how it scales to larger systems
- Try a MER sol as a scenario



# Adaptation

- How hard is it to encode the various constraints, event types, and action types that the planning system handles?
- How possible is it for a spacecraft or operations expert to review the models and logic?



# Summary

- The system described addresses problems of practical significance toward making a rover more autonomous
- The paper shows promise and insight toward a solution



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