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Modeling and Control Strategies for Autonomous Robotic Systems

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Roger W. Brockett

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The view, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other documentation.

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FIELD GROUP SUB-GROUP

18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

The work done under this contract resulted in the development of new models for studying frictional effects in the drive mechanism for robots and new methods of simulating these effects.

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Summary

Under this grant we supported Dr. Pierre Dupont who worked the modeling of friction in the type of mechanism used in the Field Material Handling Robot. This work has been reported in the open literature through the following papers.

1. P. Dupont, "The Effect of Friction on the Forward Dynamics Problem", **International Journal of Robotics Research**. (to appear)
2. P. Dupont, "Avoiding Stick-Slip in Position and Force Control through Feedback", **Proceedings of the 1991 IEEE International Conference on Robotics and Automation**, Sacramento, CA , April 1991.
3. P. Dupont, "Friction Modeling in Dynamic Robot Simulation", **Proceedings of the 1990 IEEE International Conference on Robotics and Automation**, Cincinnati, Ohio, May 1990.

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