

IST 042
**Error Control for the Next Generation of Ultra-High-Capacity Digital Data
Storage Systems**

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Abstract

In this project, we consider inherent physical features and system requirements, focusing on both theoretical and practical issues that have limited the exploitation of currently available good codes in real recording systems. The recording channels that will be studied include the ideal partial response (PR) models with white Gaussian noise, the more realistic Lorentzian channels with colored noise, and the actual data set collected from the read-back head of the recording devices (through Seagate Research Lab). Partner companies include Seagate Technology and Seagate Research Lab (Pittsburgh, PA).