Title: The Territory Around BQP: Results and Open Problems

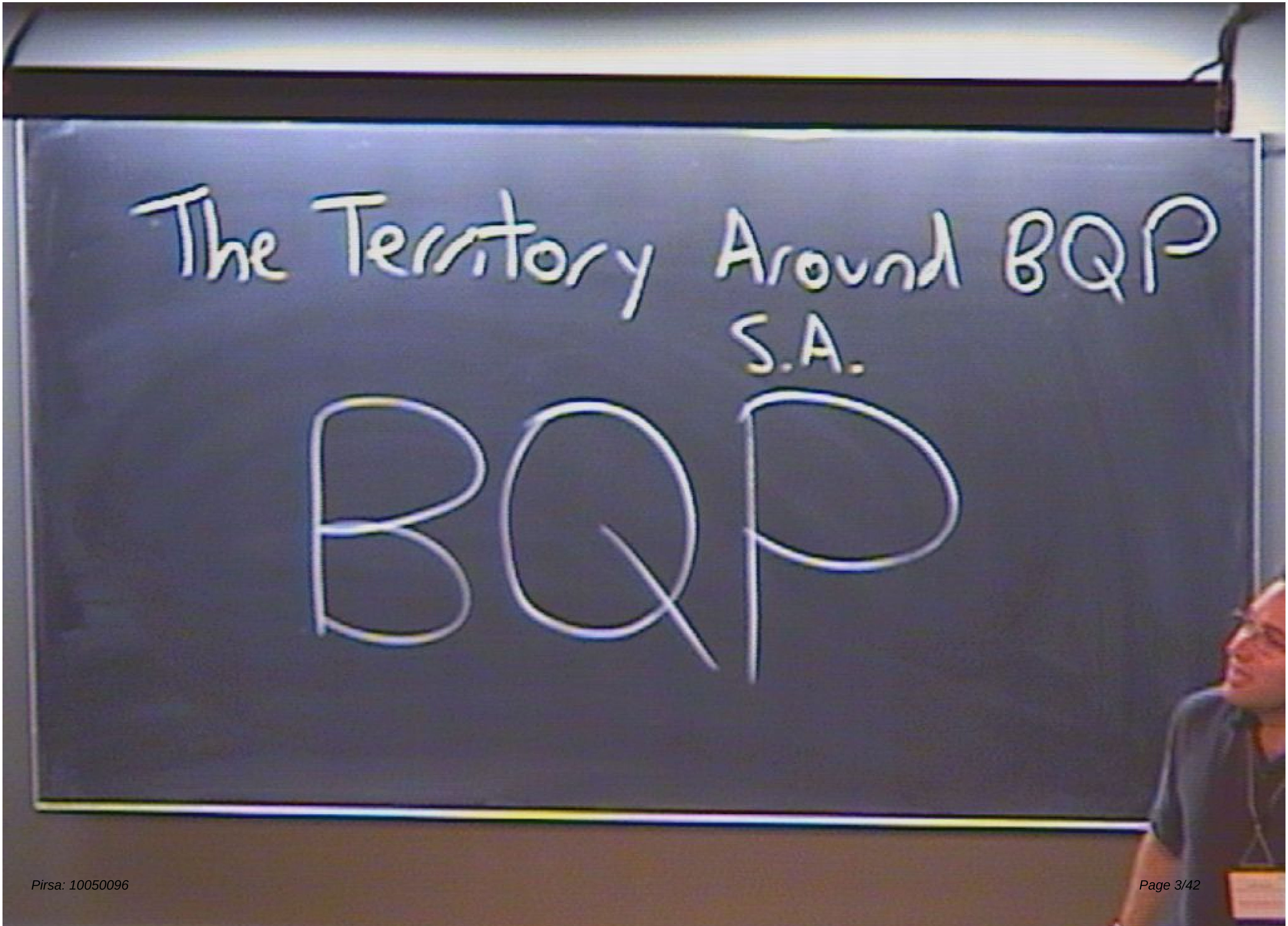
Date: May 13, 2011 11:40 AM

URL: http://pirsa.org/10050096

Abstract: In this talk, I'll survey various "foils" of BQP (Bounded-Error Quantum Polynomial-Time) that have been proposed: that is, changes to the quantum model of computation that make it either more or less powerful. Possible topics include: postselected quantum computing, quantum computing with nonlinear Schrodinger equation, quantum computing with non-unitary linear transformations, quantum computing with hidden variables, linear-optical quantum computing, quantum computing with restricted gate sets, quantum computing with separable mixed states, quantum computing over finite fields, and more depending on audience interest.

The Territory Around BQP

S.A.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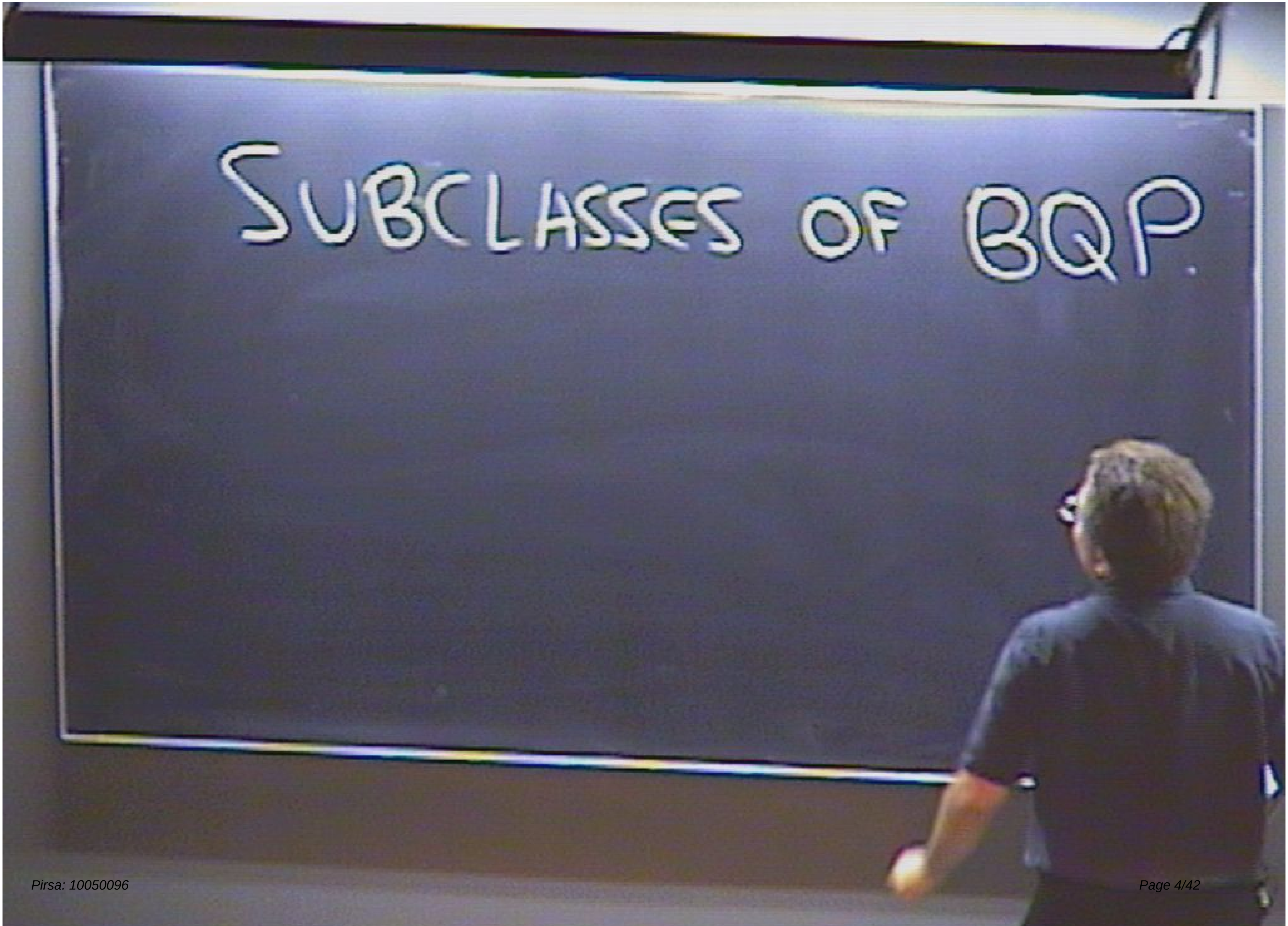
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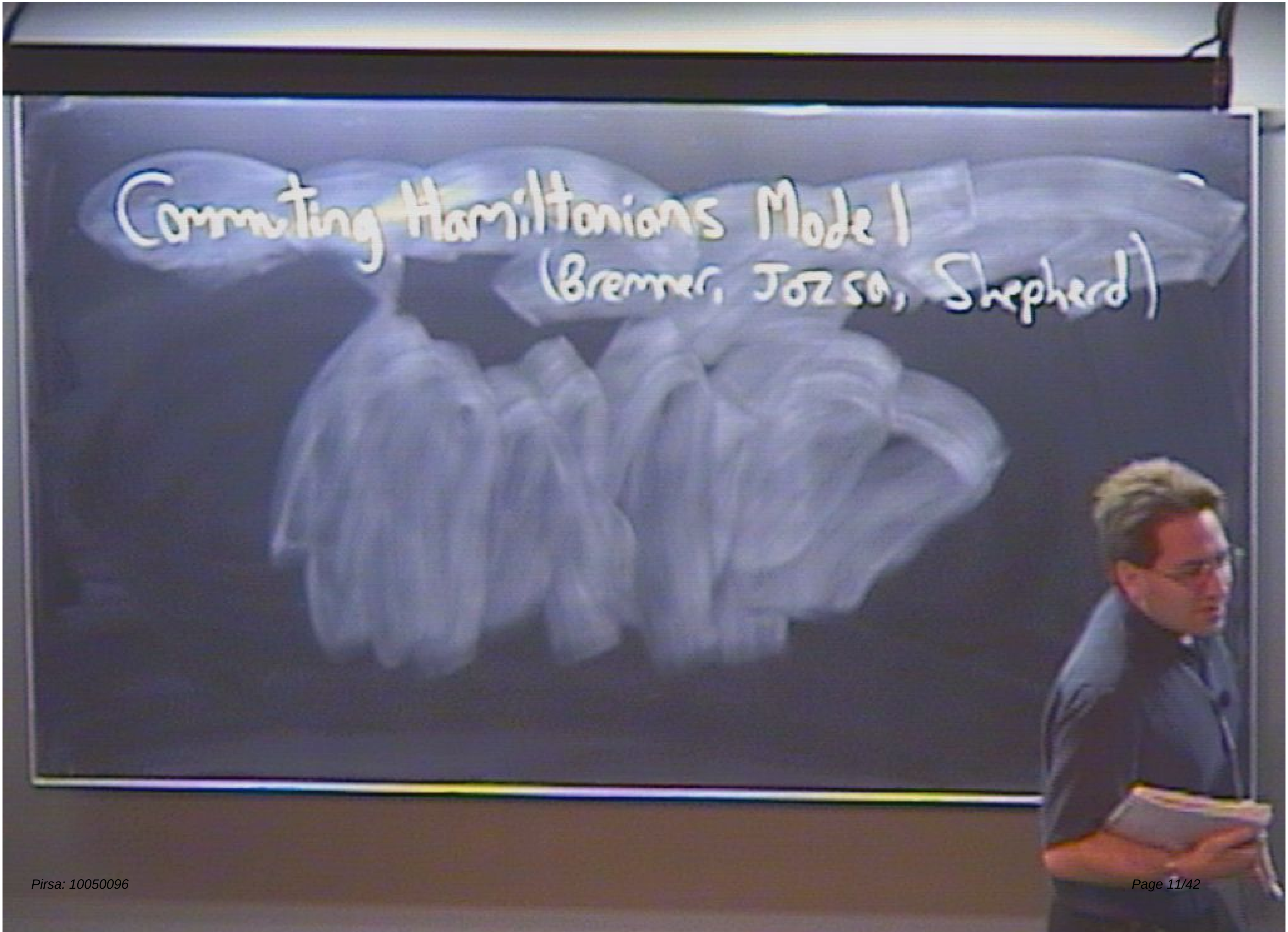
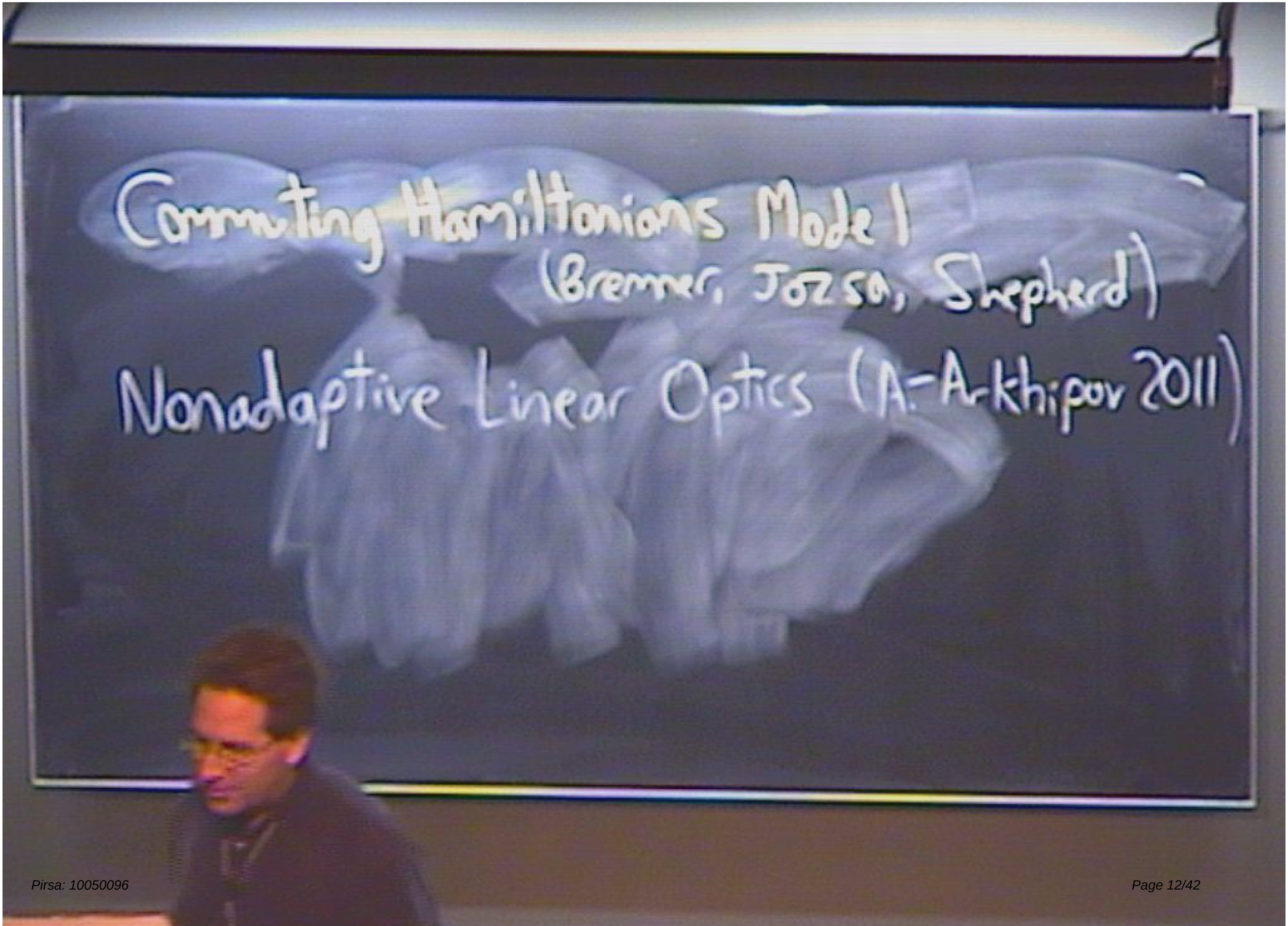

Commuting Hamiltonians Model
(Bremner, Jozsa, Shepherd)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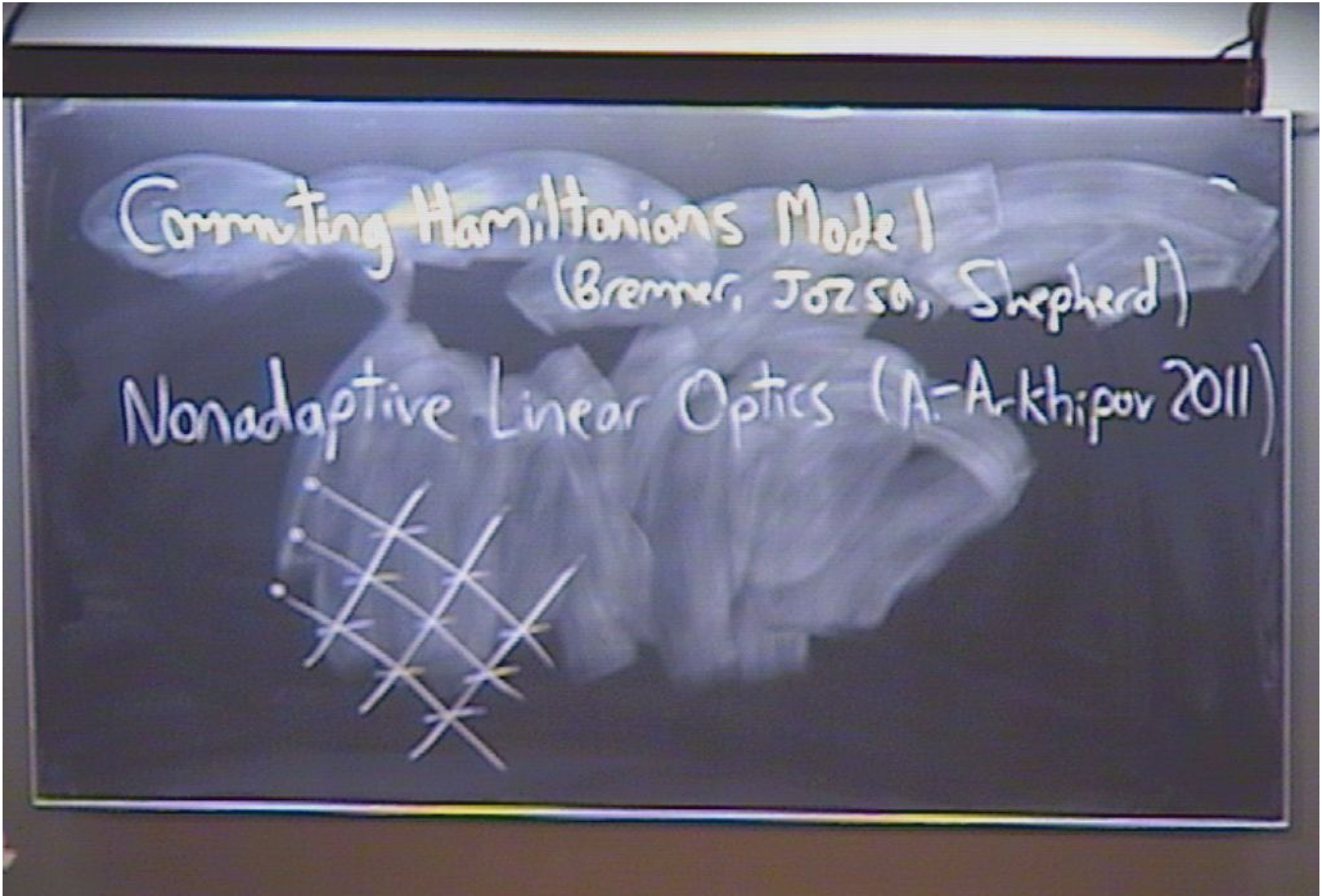
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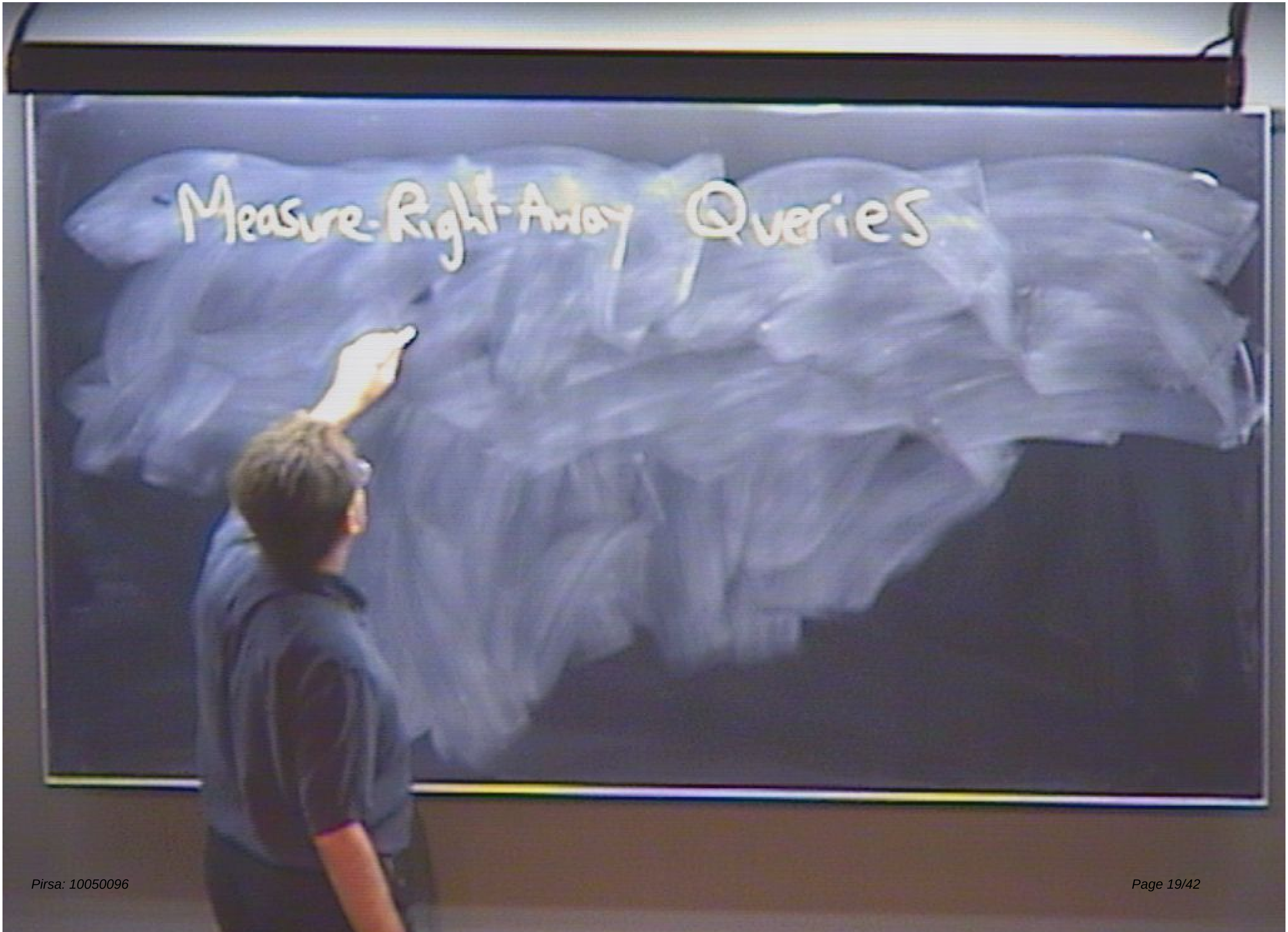
Problem.

Permutational Quantum Computing (Jordan)

QC with Decoherence Above Threshold.

<u>Problem</u>: Is there a set of (unitary, qubit) gates that gives you an intermediate model between P and BQP?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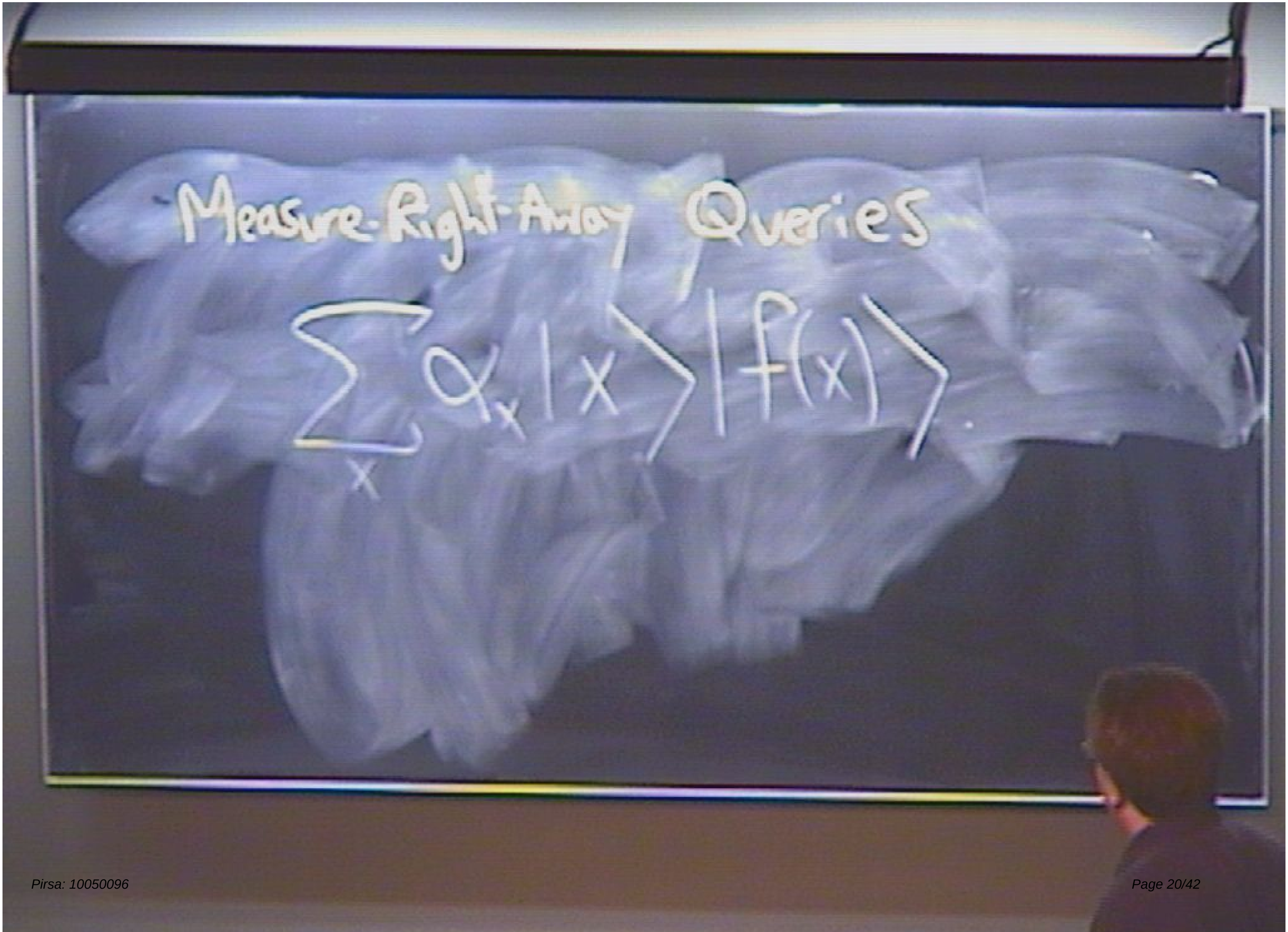
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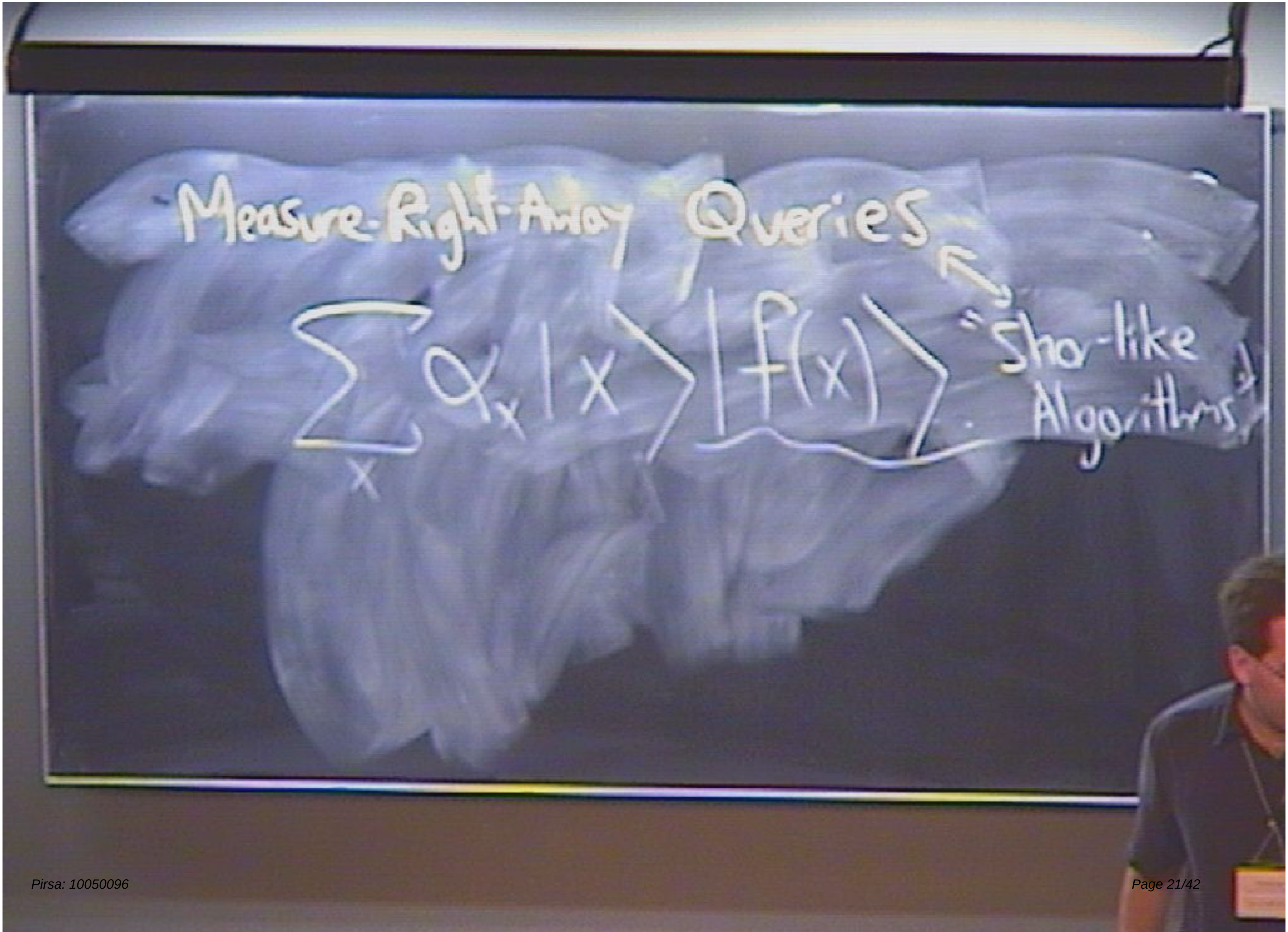
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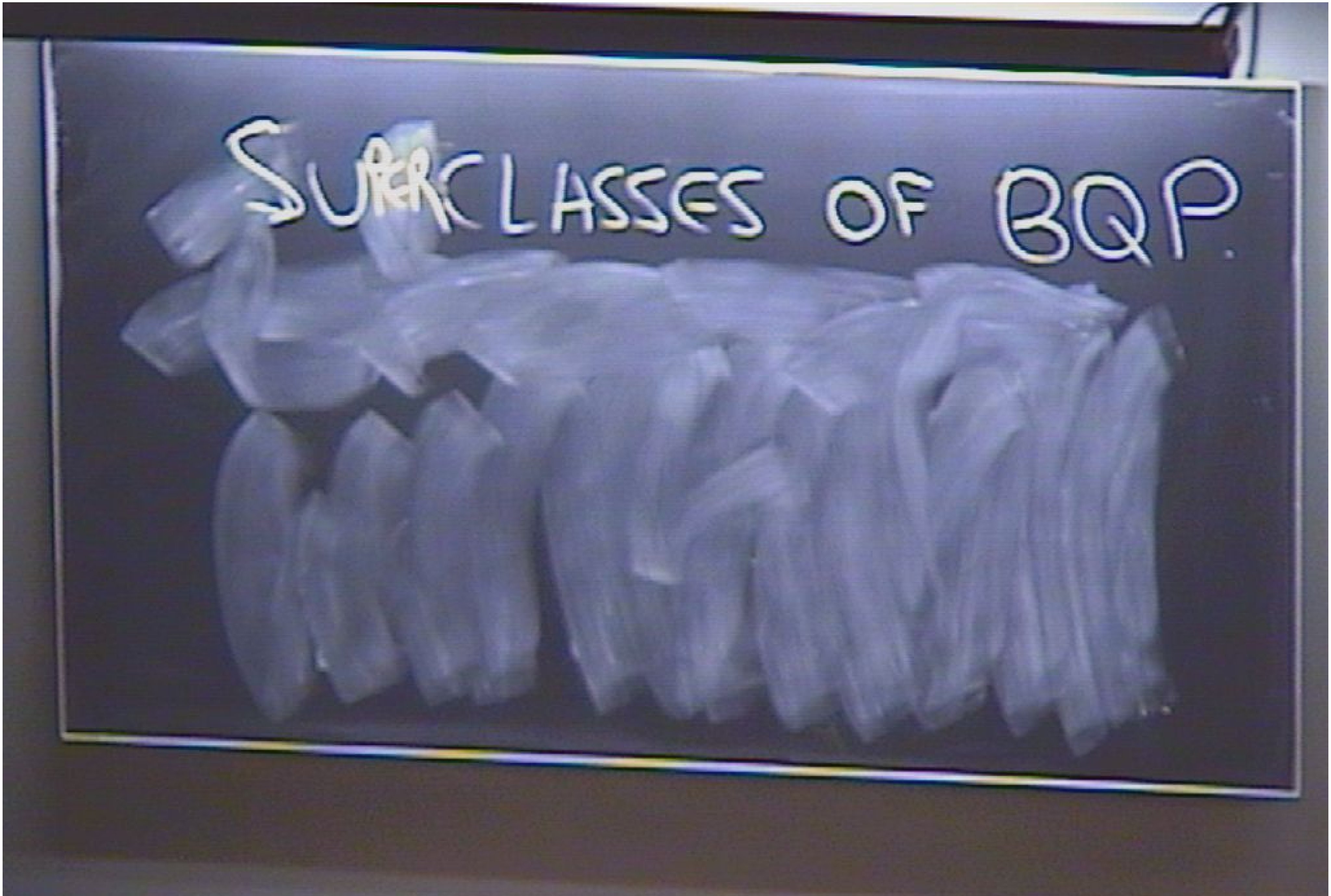
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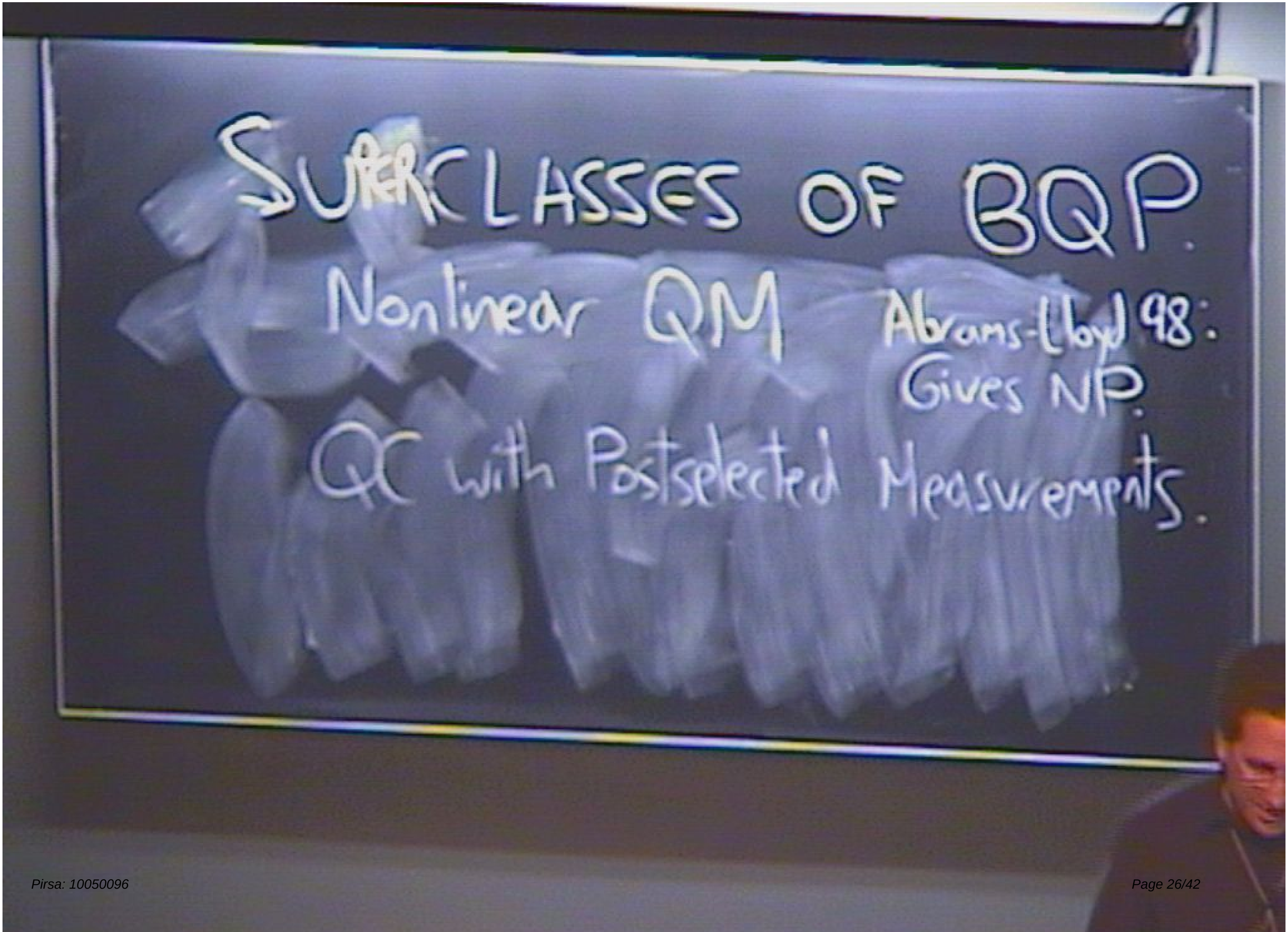
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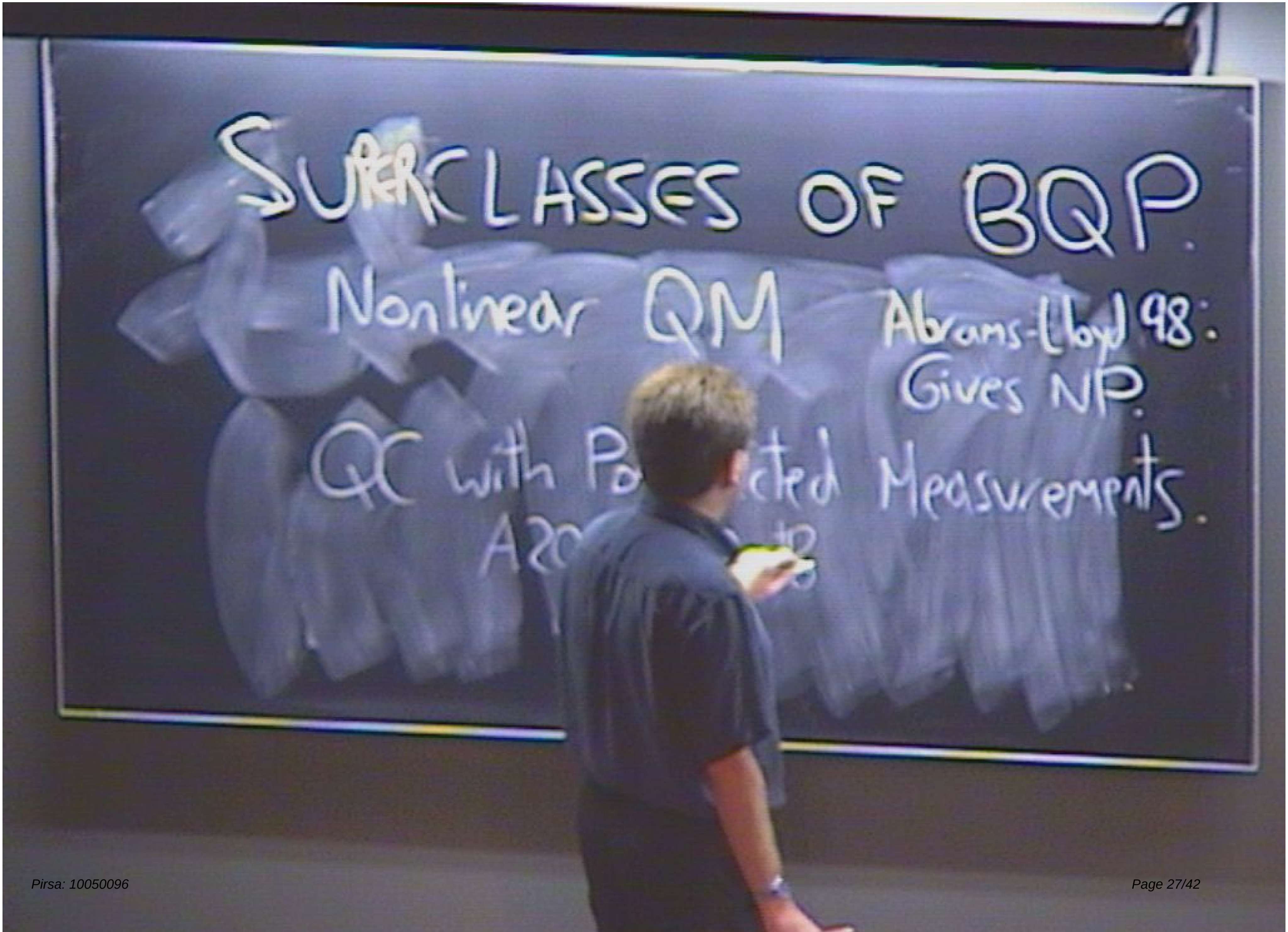
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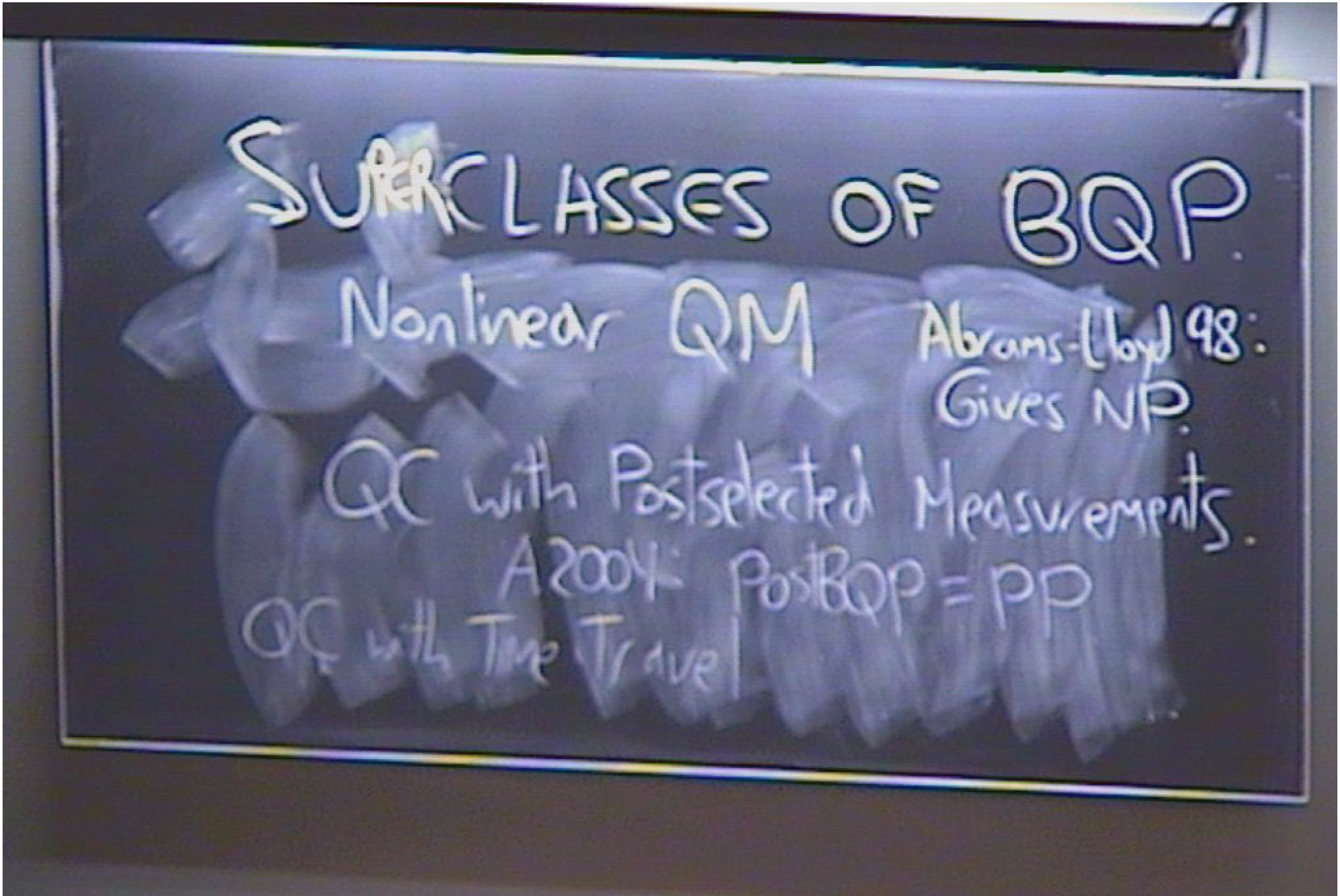
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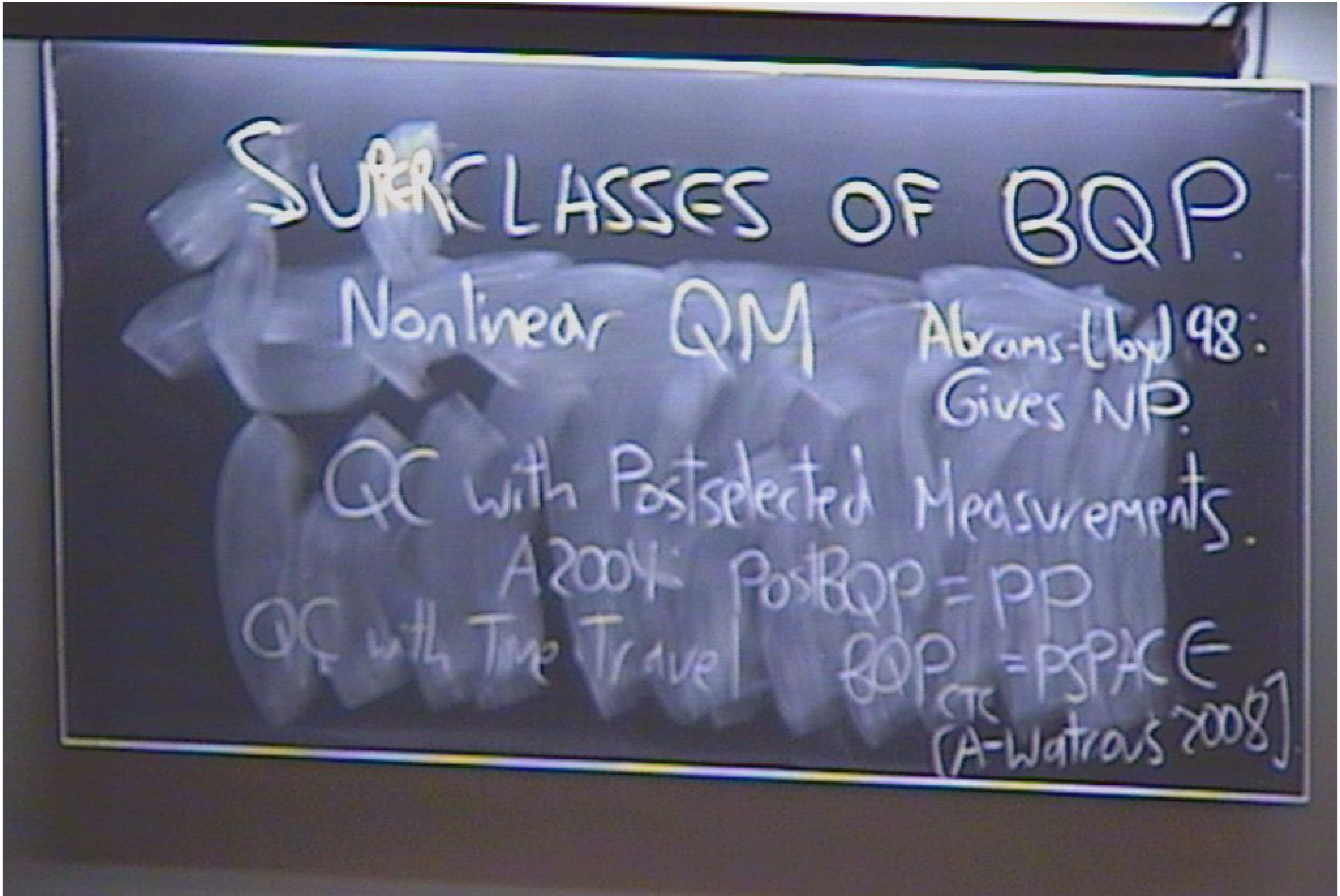
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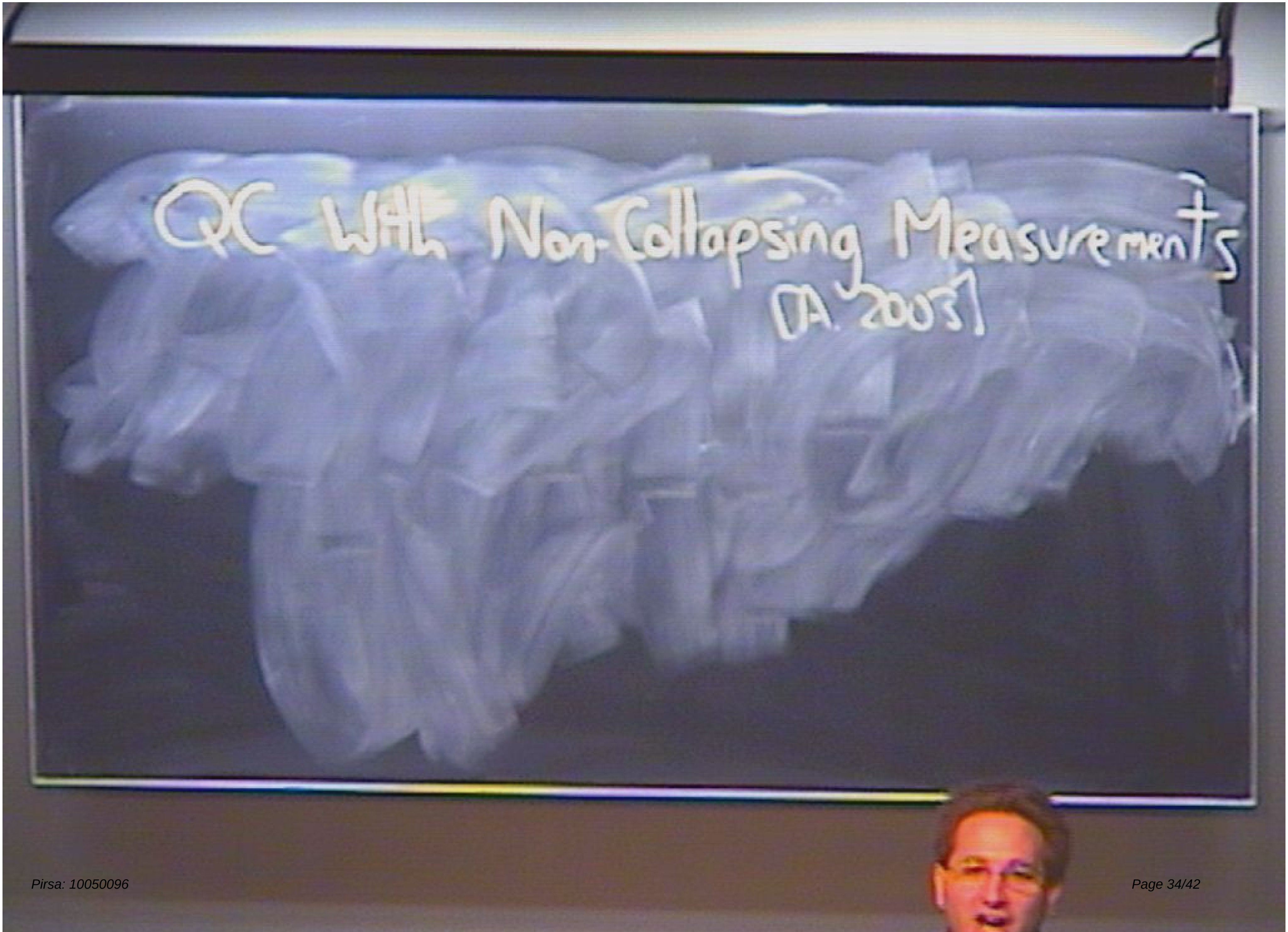
QC With Non-Collapsing Measurements
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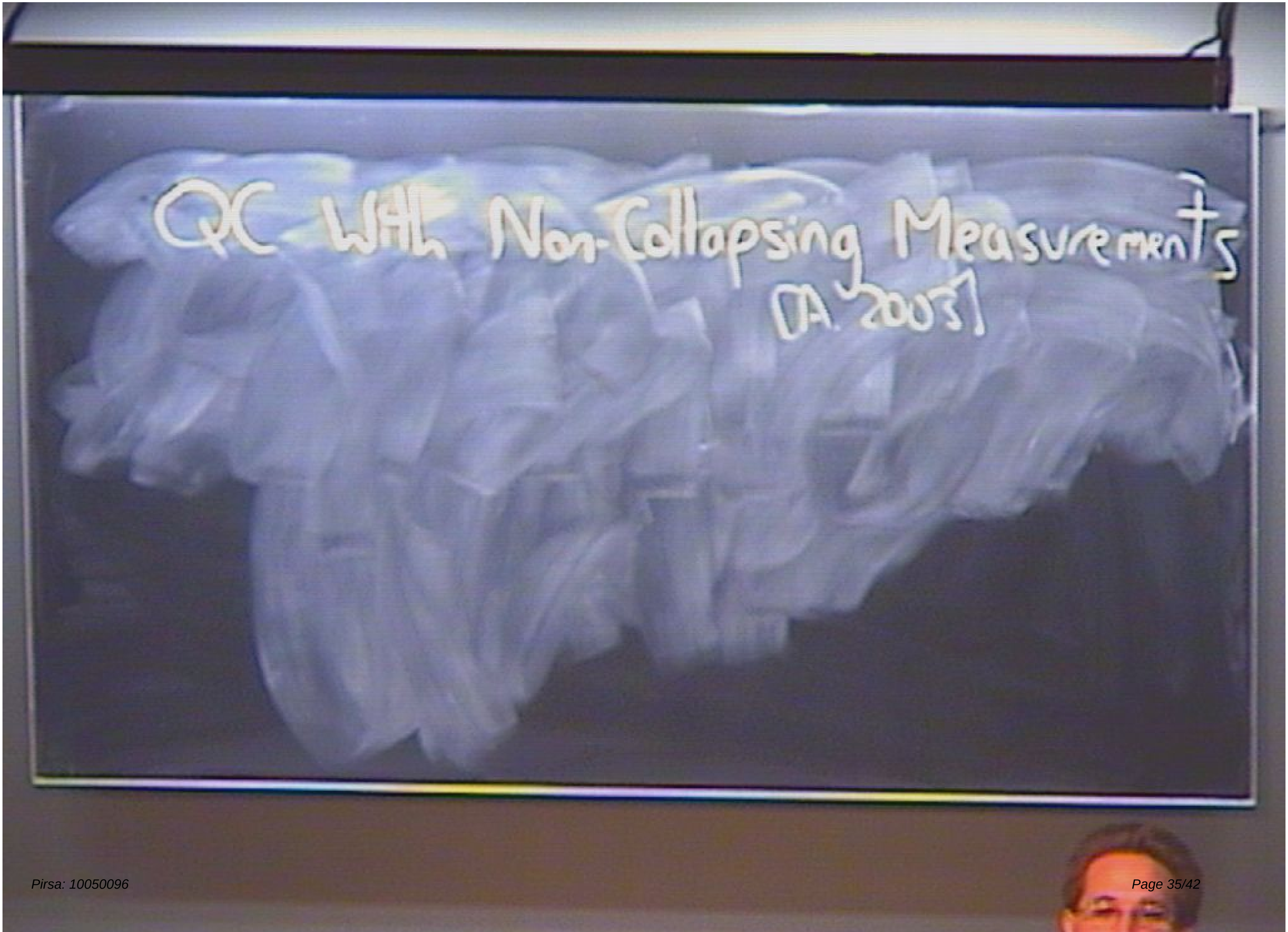
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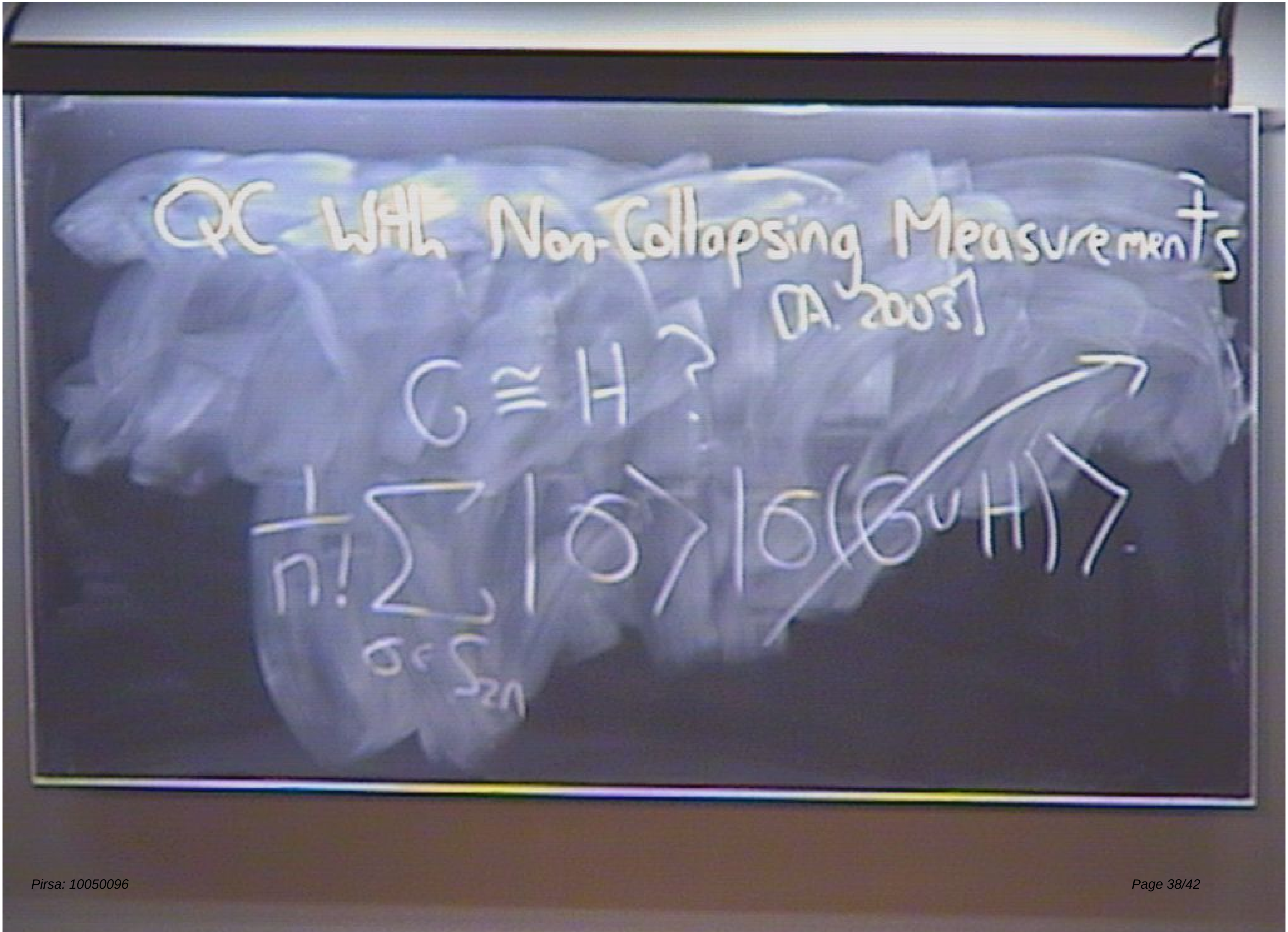
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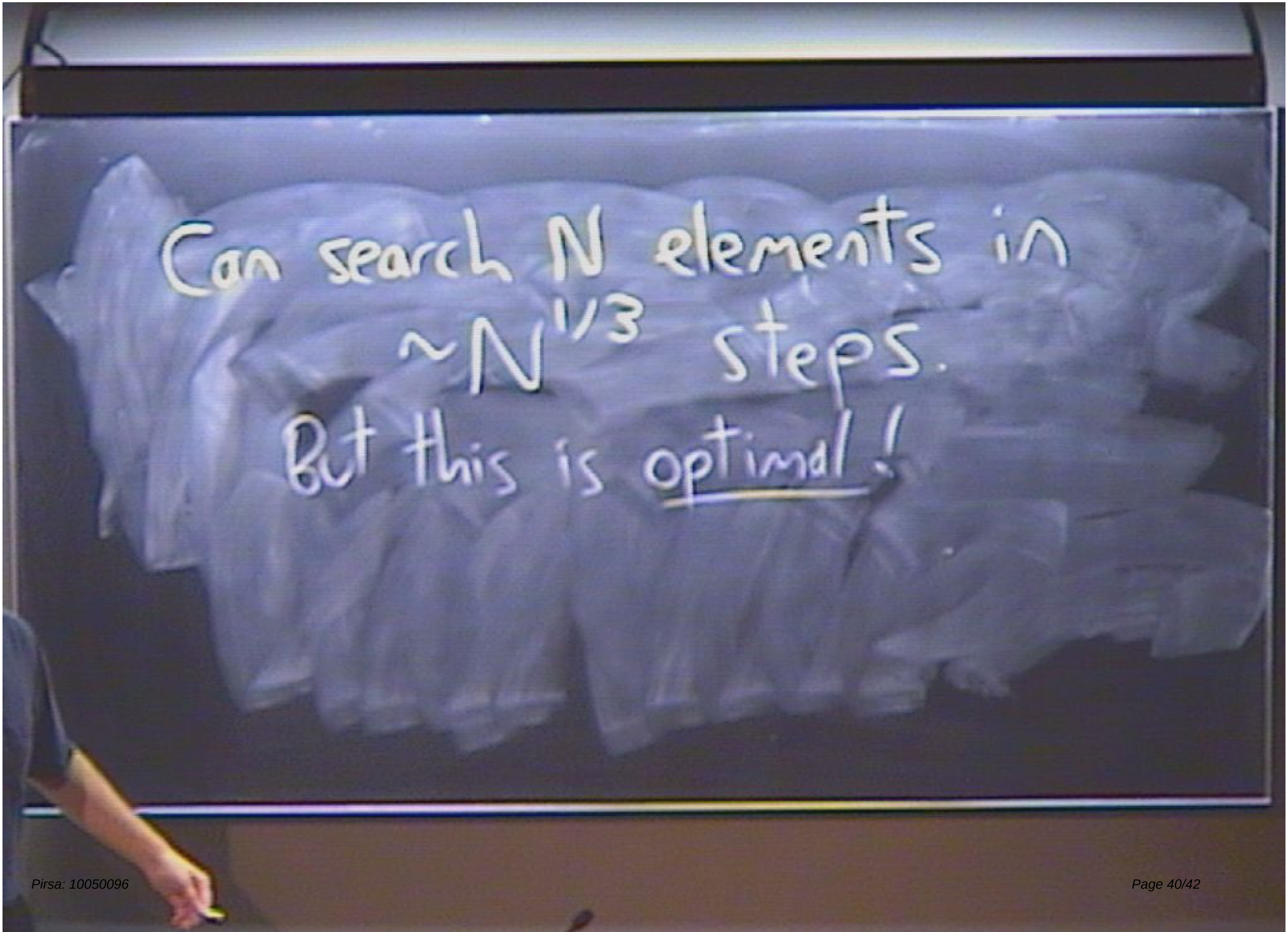
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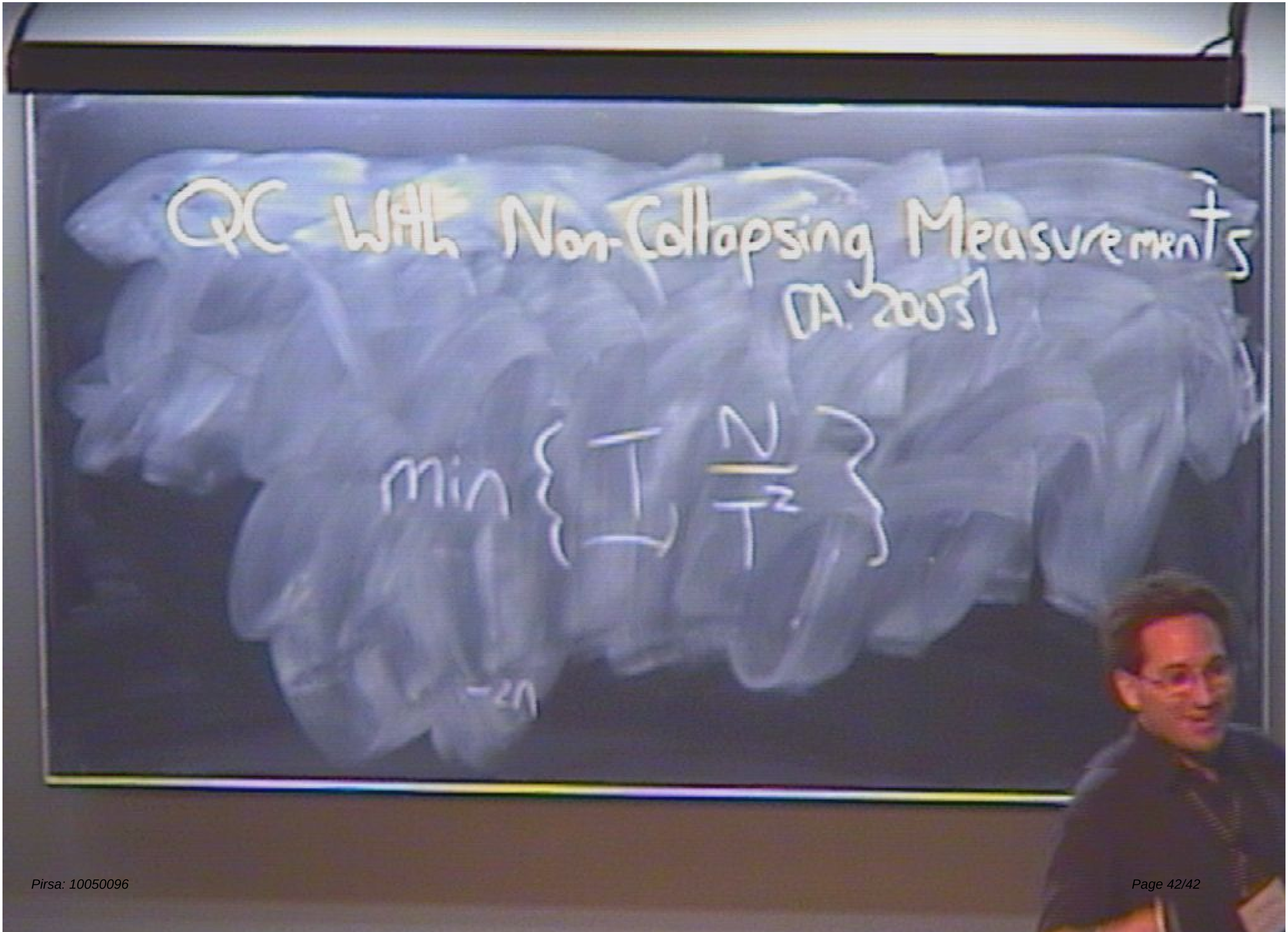
Sampling Hidden-Variable Trajectories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