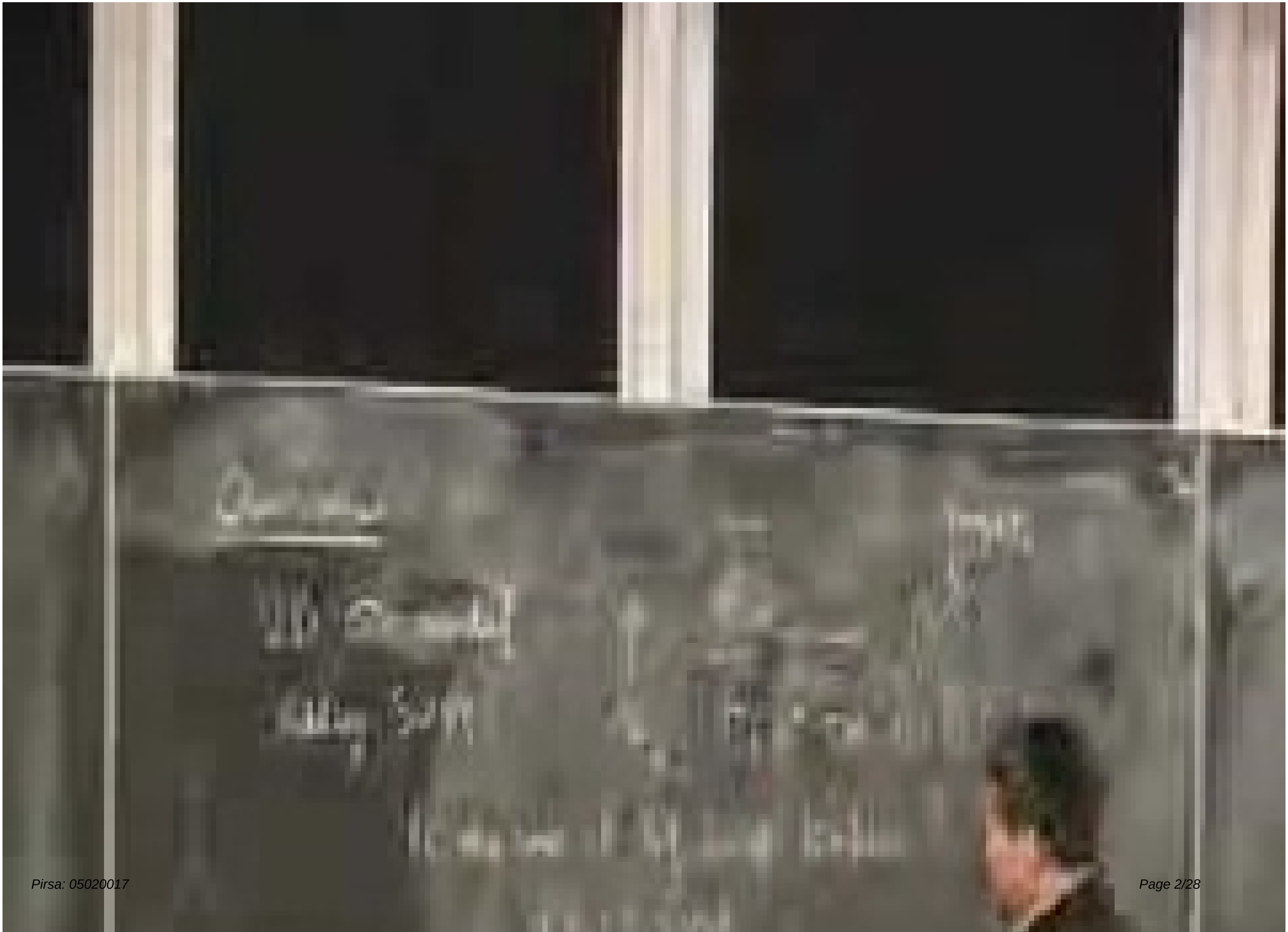
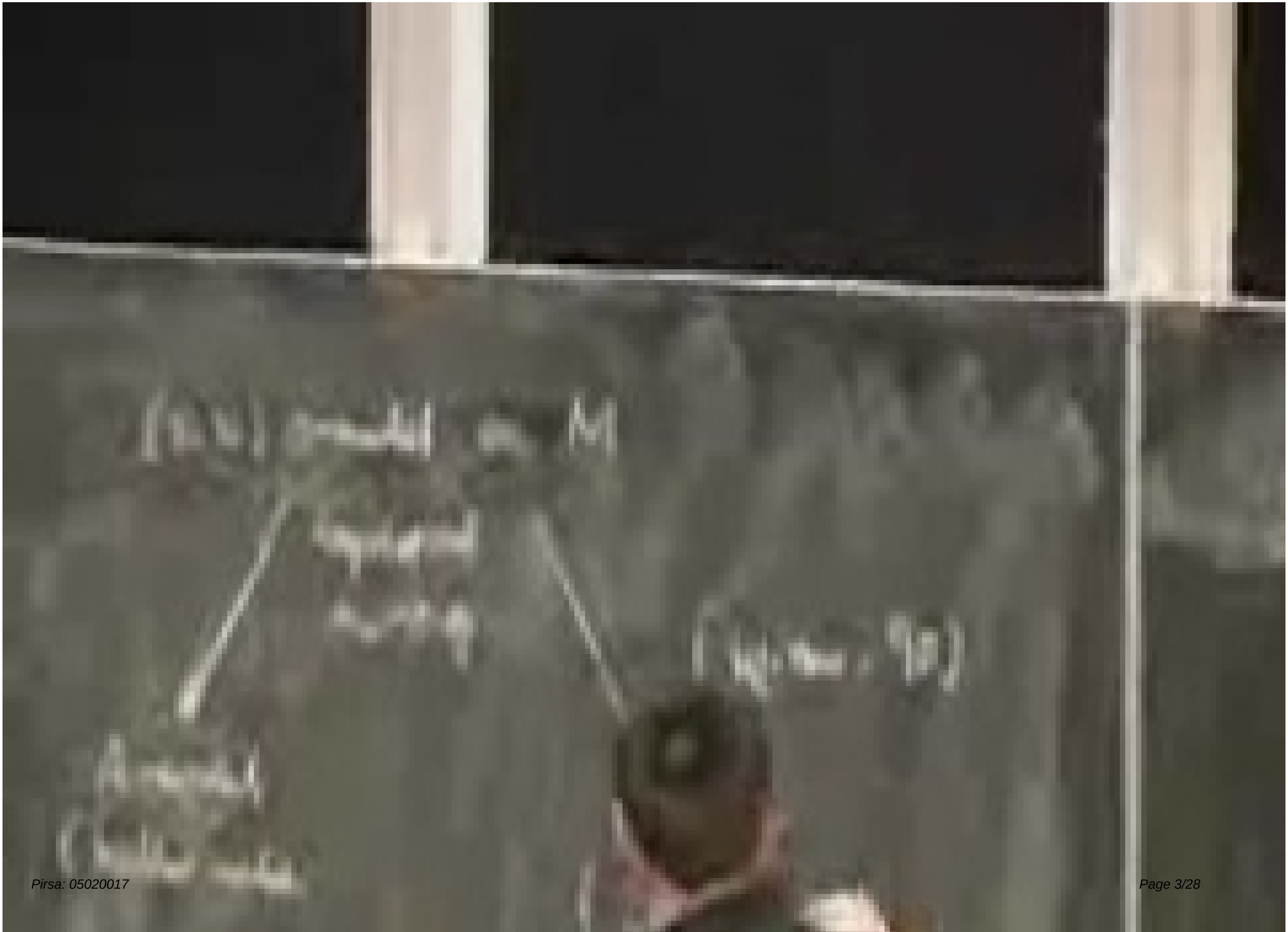
Title: Twisted Generalized Calabi-Yau Manifolds and Topological Sigma Models with Flux (Part 1)

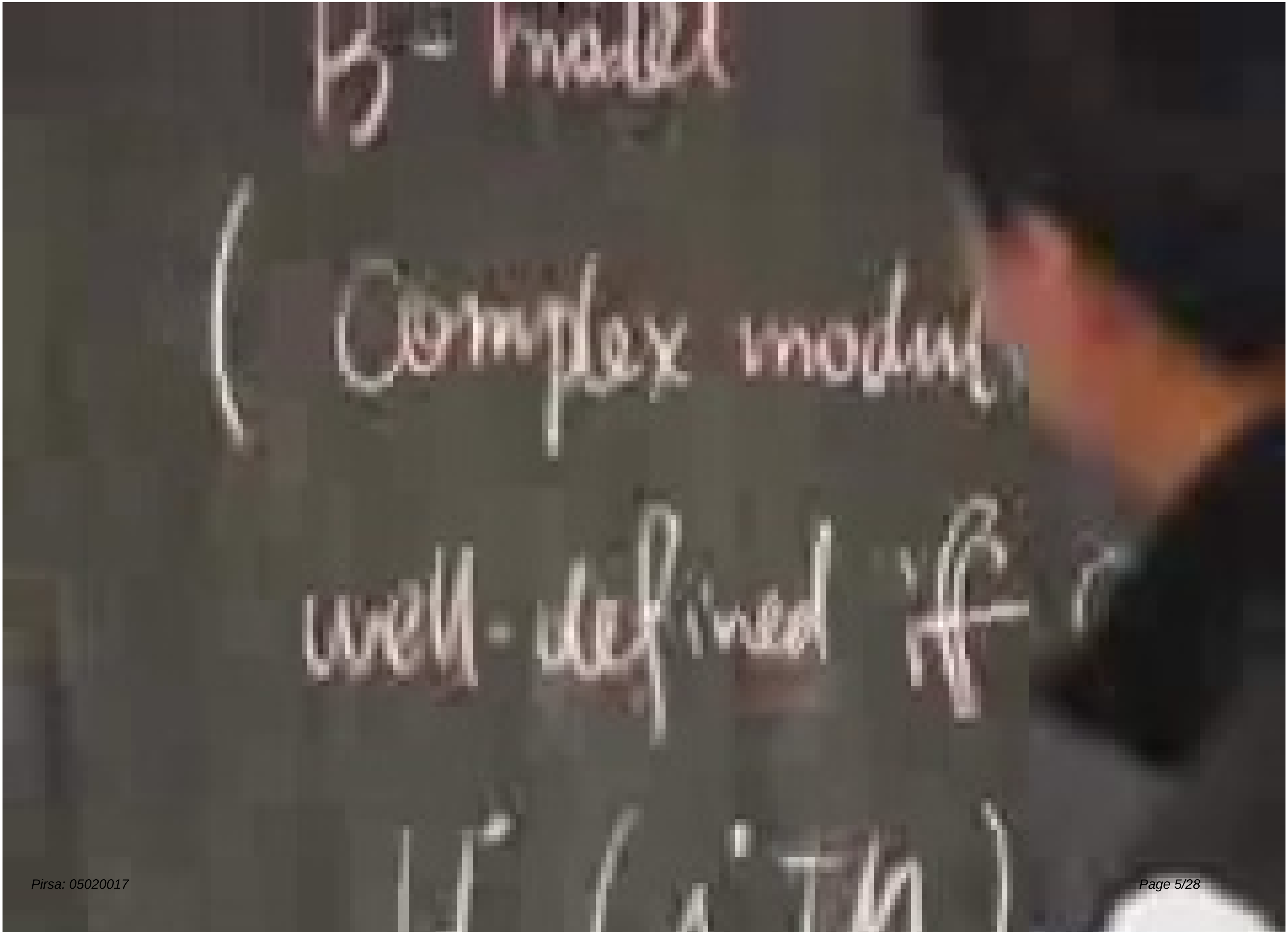
Date: Feb 15, 2005 02:00 PM

URL: http://pirsa.org/05020017

Abstract: In these lectures, we examine how twisted generalized Calabi-Yau (GCY) manifolds arise in the construction of a general class of topological sigma models with non-trivial three-form flux. The topological sigma model defined on a twisted GCY can be regarded as a simultaneous generalization of the more familiar A-model and B-model. Emphasis will be given to the relation between topological observables of the sigma model and a Lie algebroid cohomology intrinsically associated with the twisted GCY. If time permits, we shall also discuss topological D-branes in this more general setting, and explain how the viewpoint from the Lie algebroid helps to elucidate certain subtleties even for the conventional A-branes and B-branes. The lectures will be physically motivated, although I will try to make the presentation self-contained for both mathematicians and physicists.



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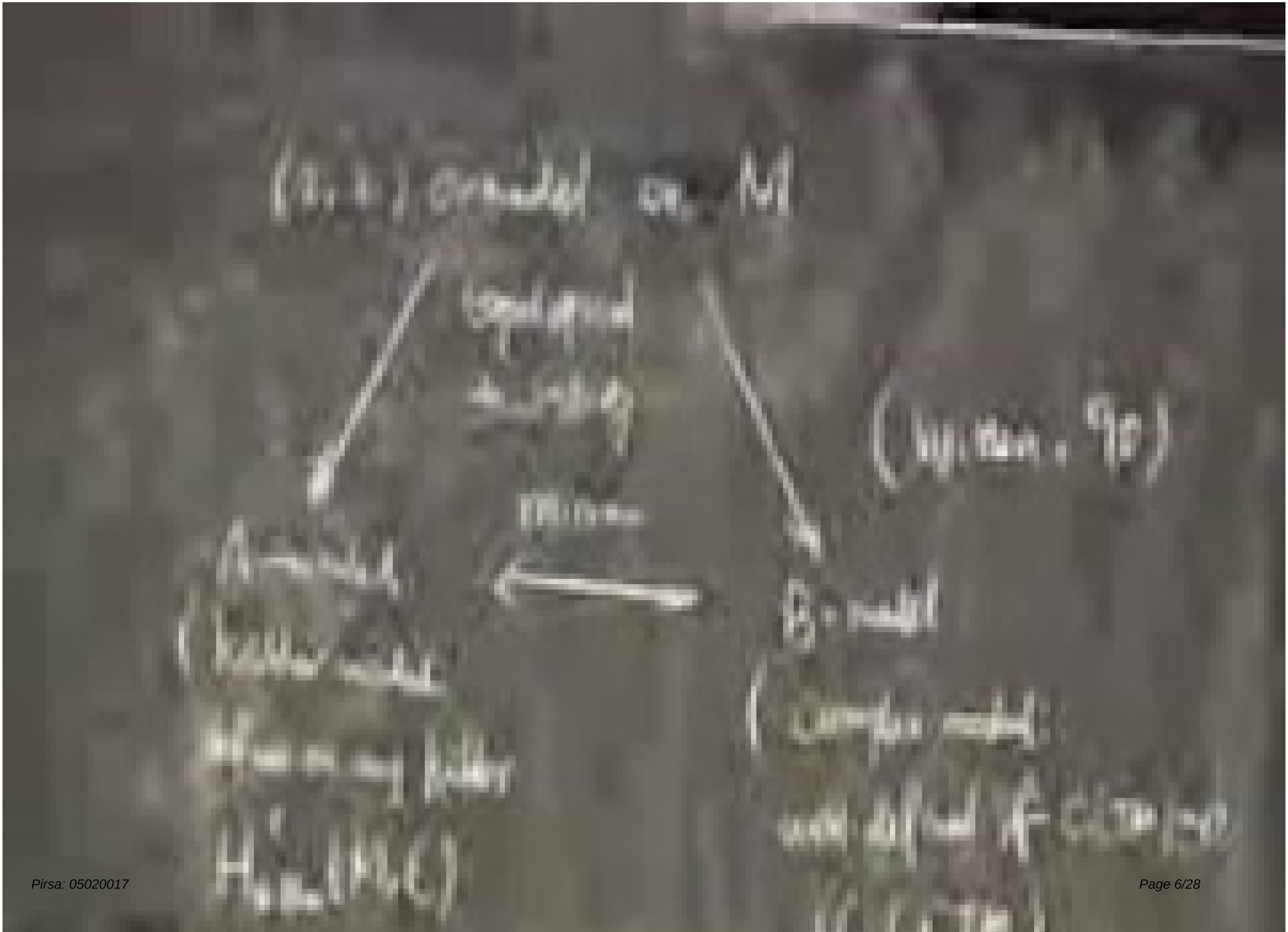
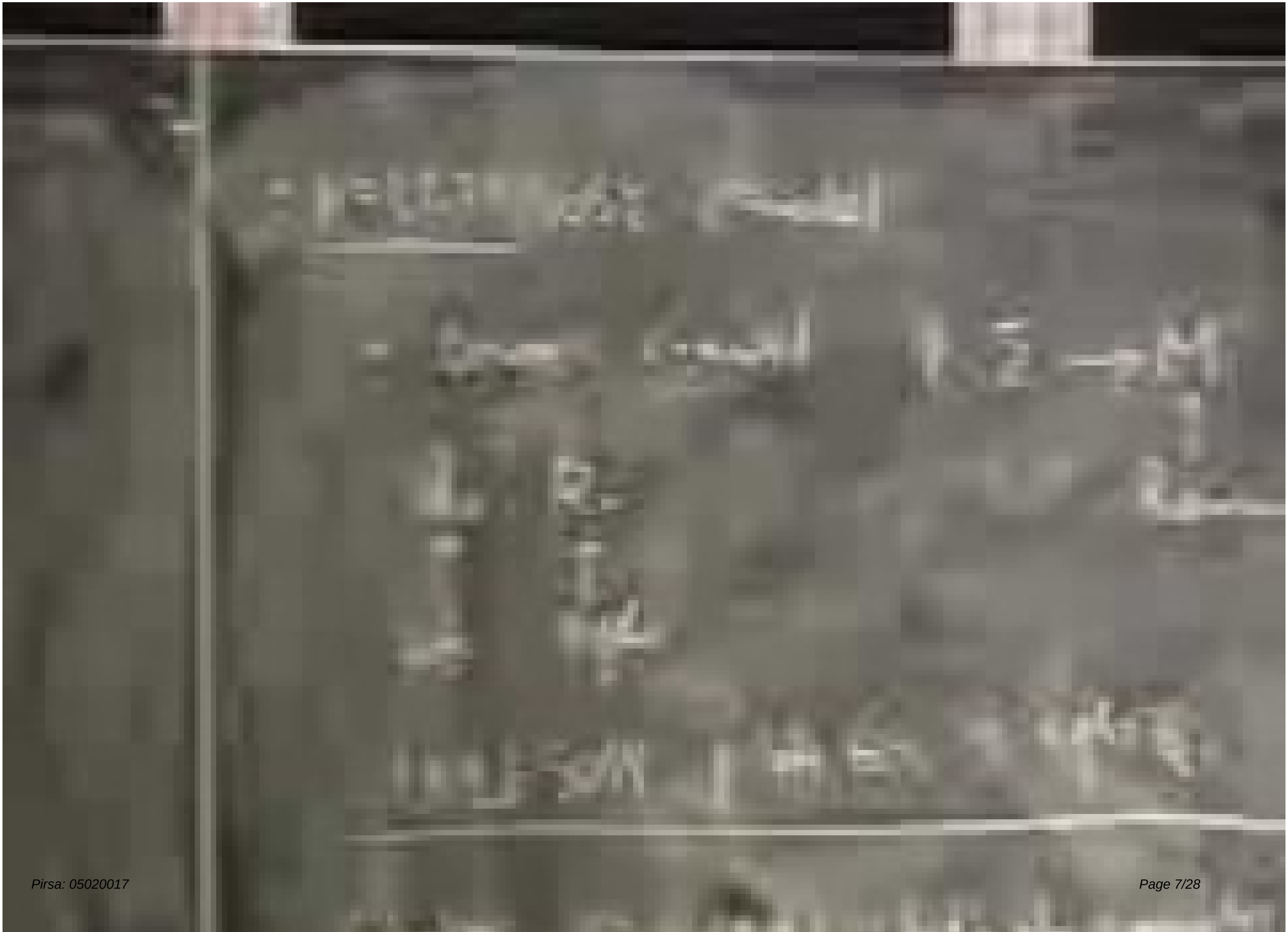
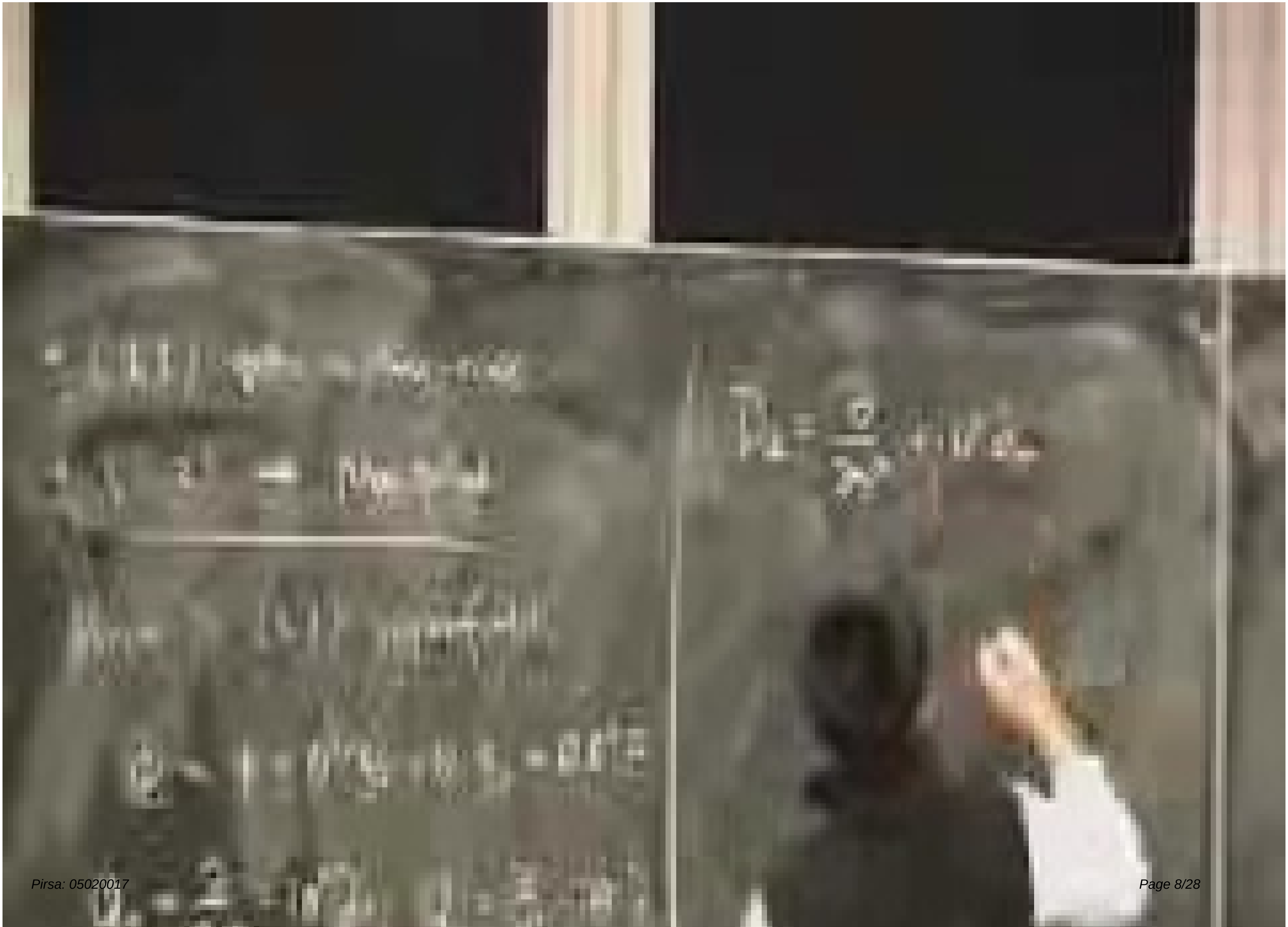
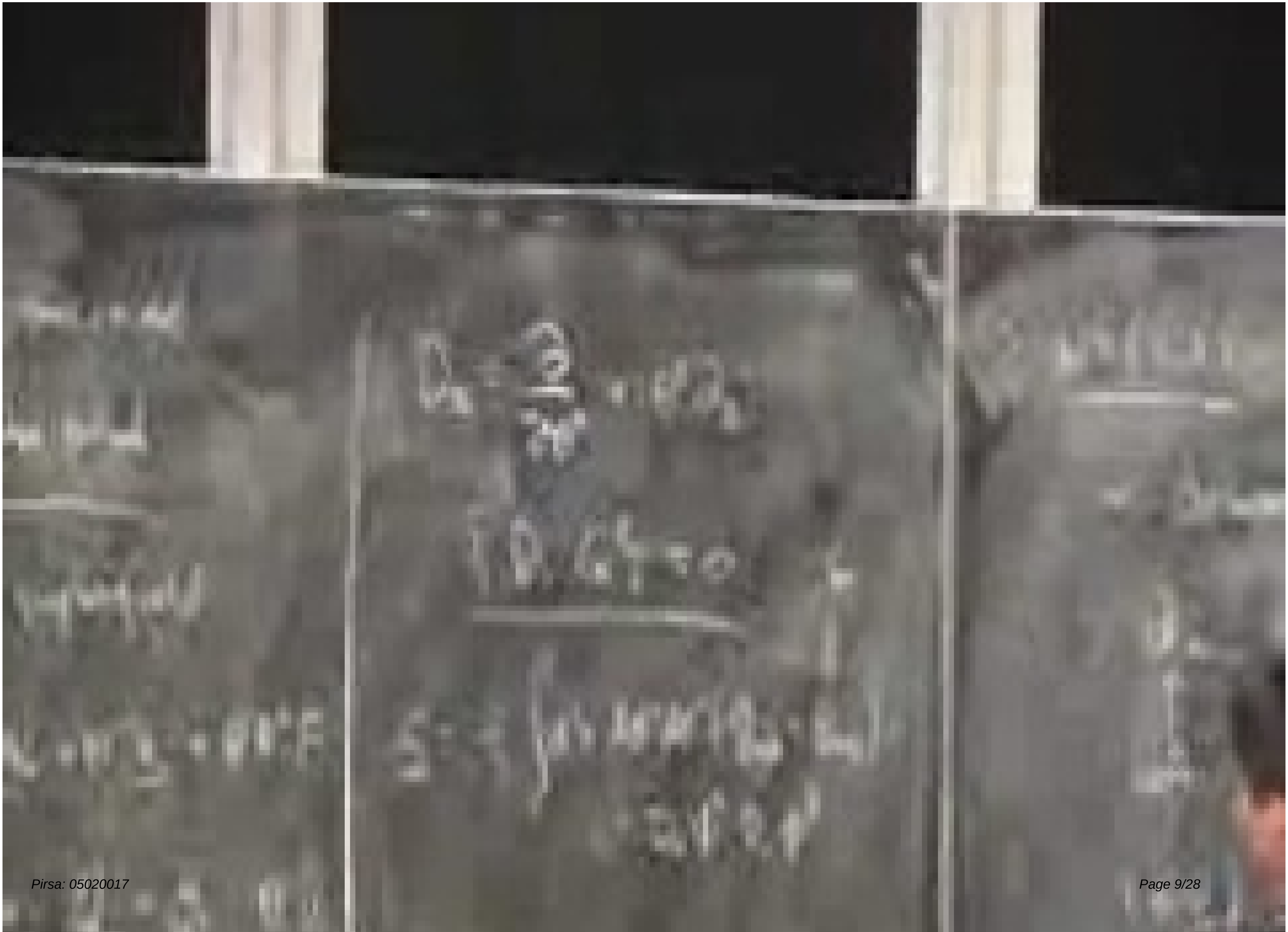
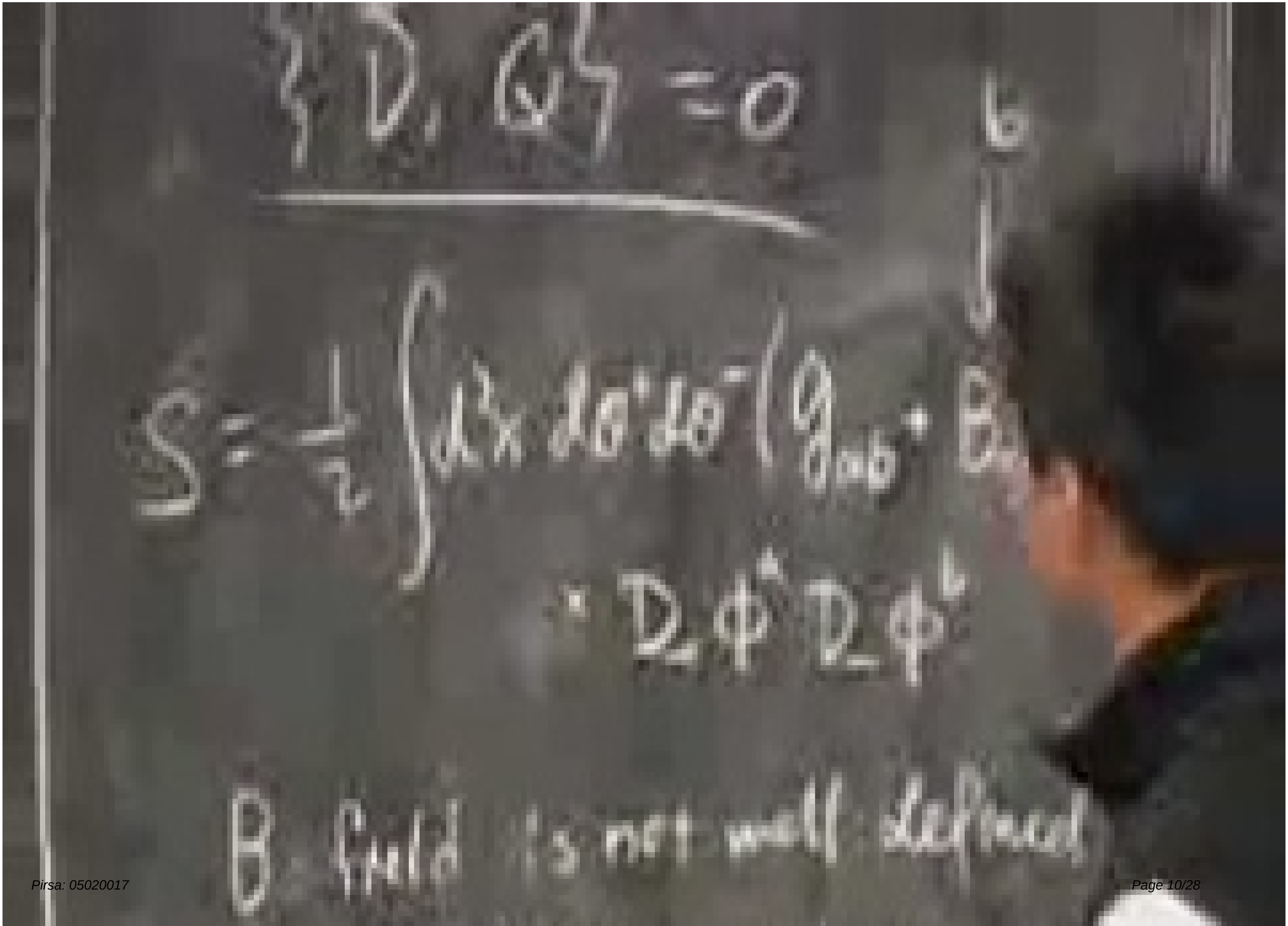
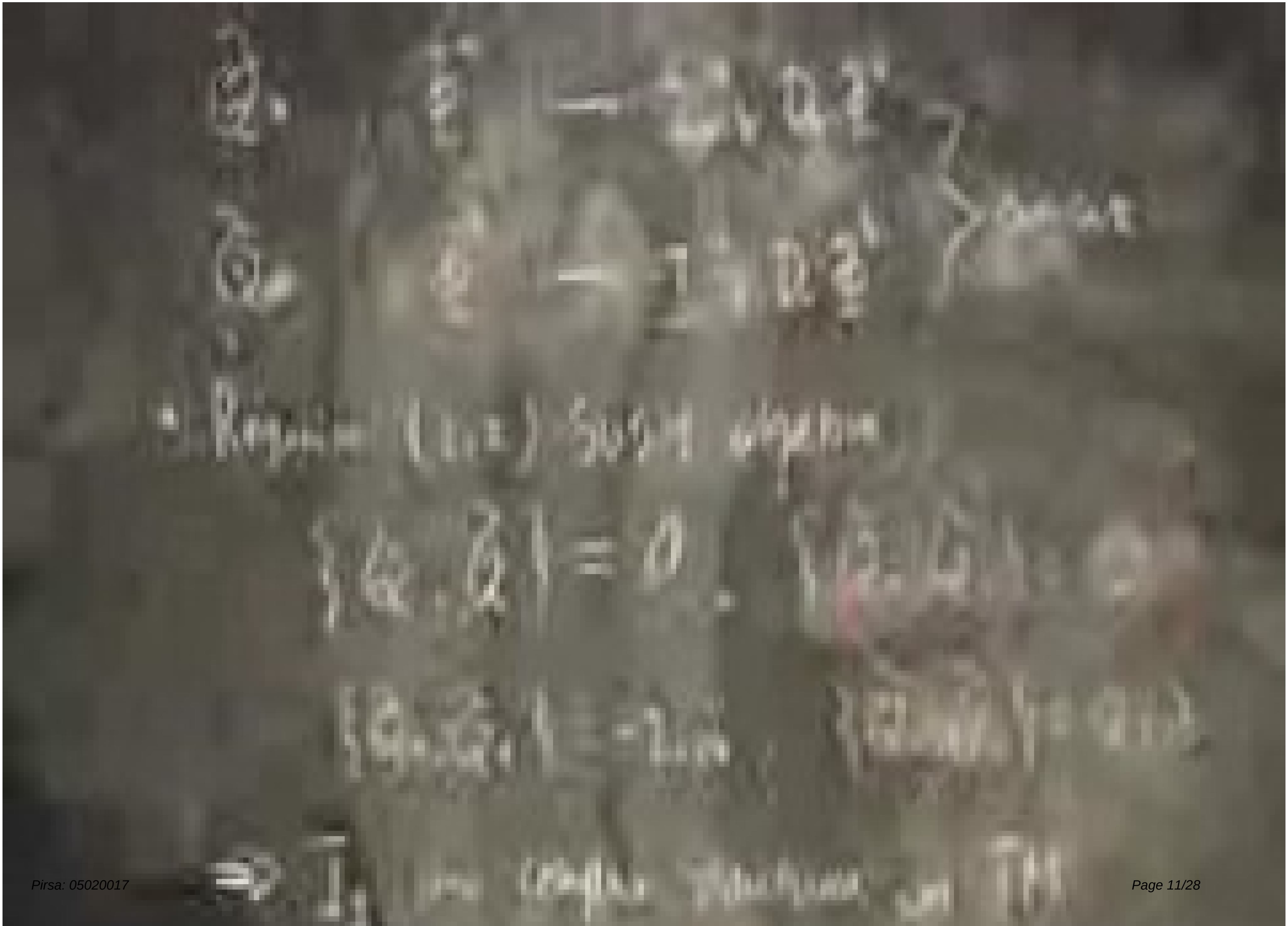

A-model
B-model

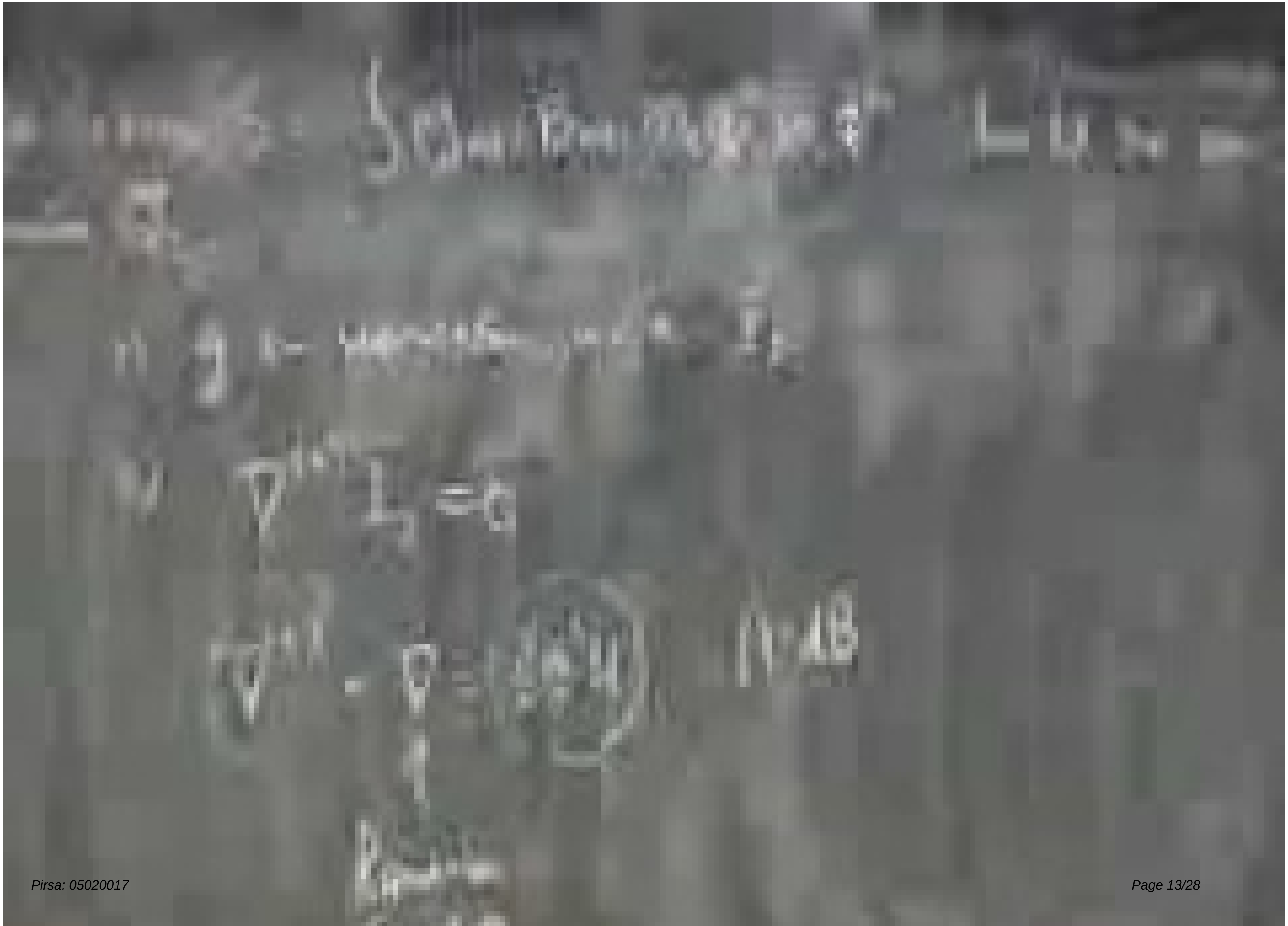


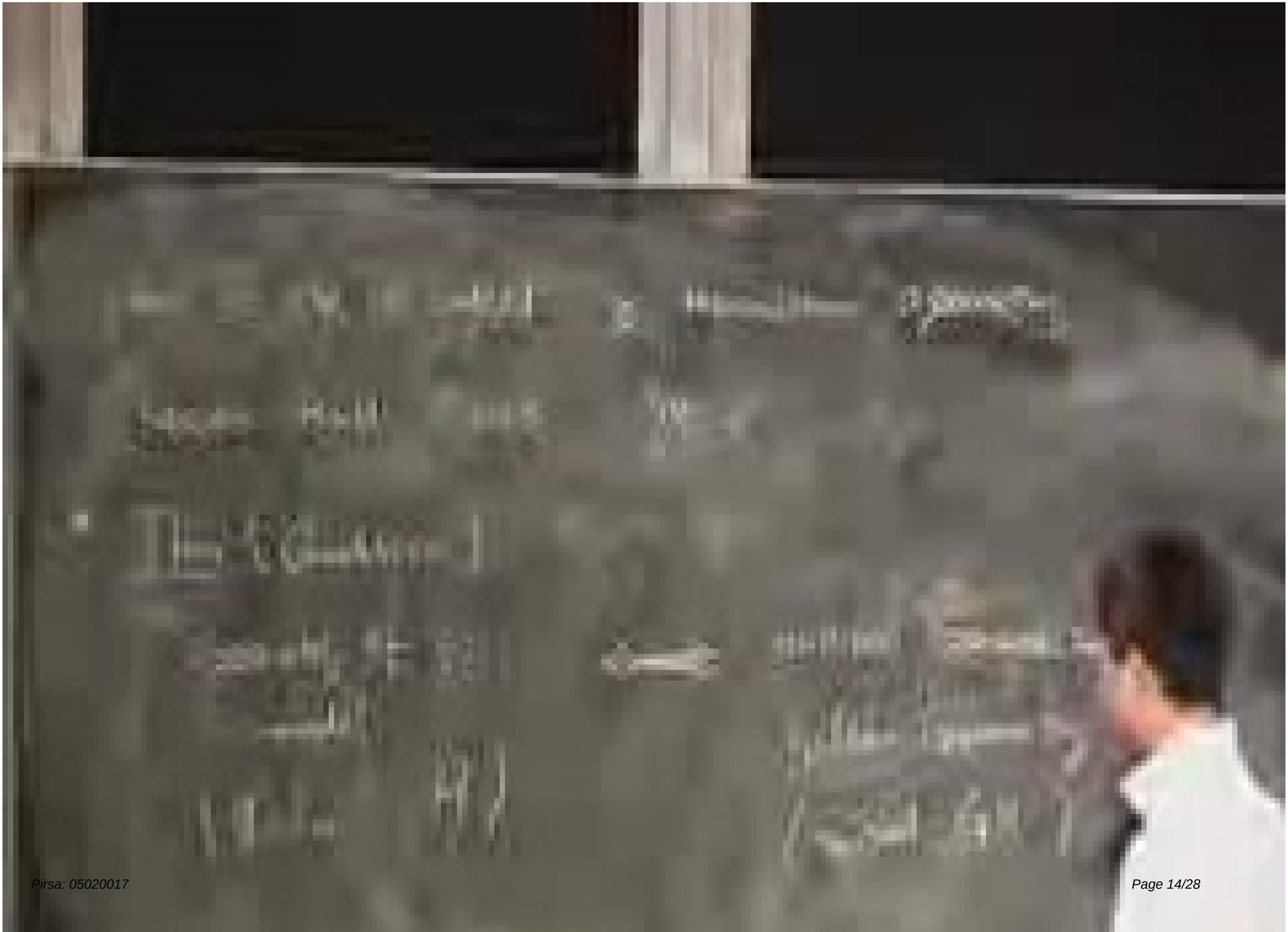


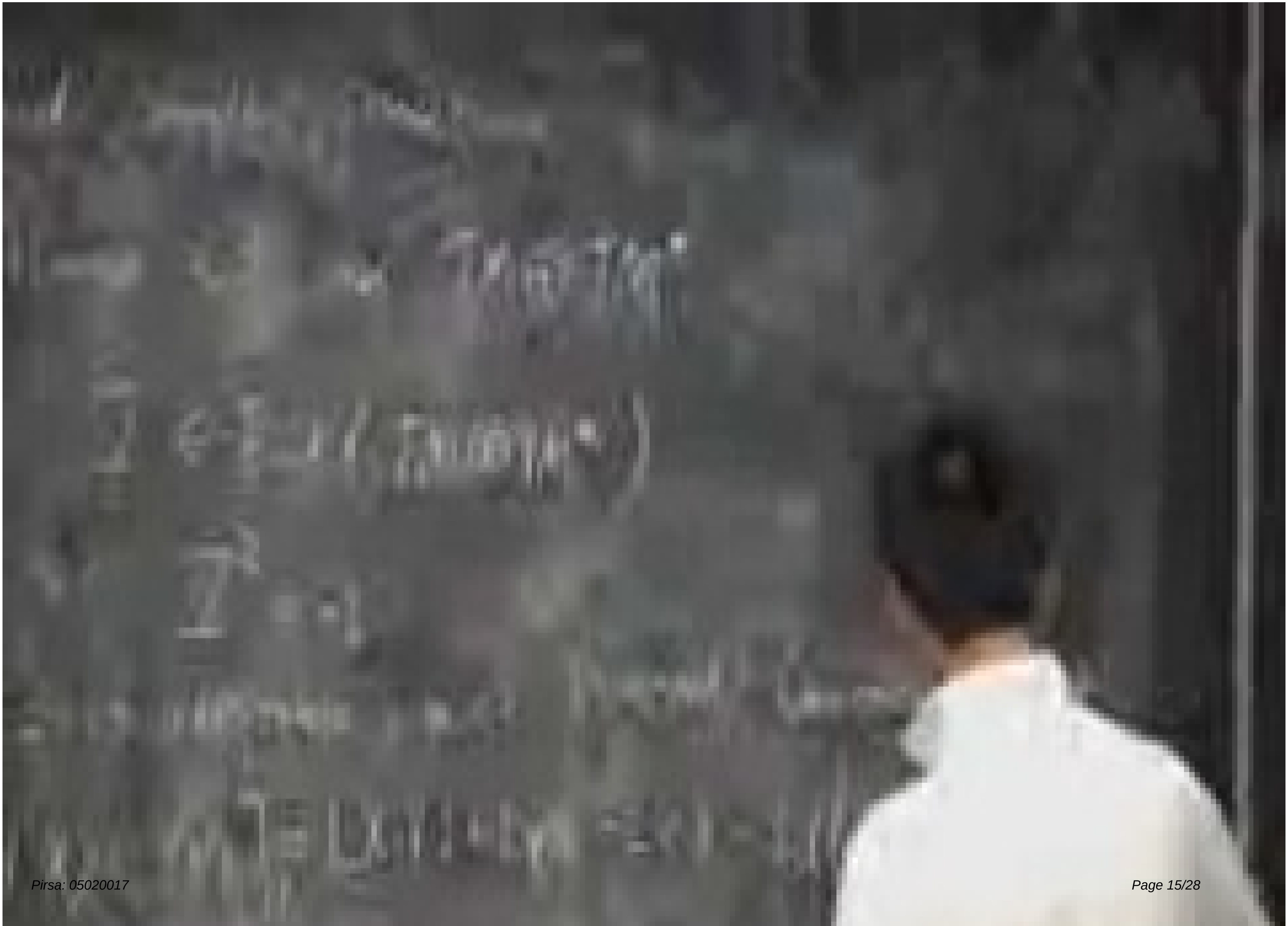


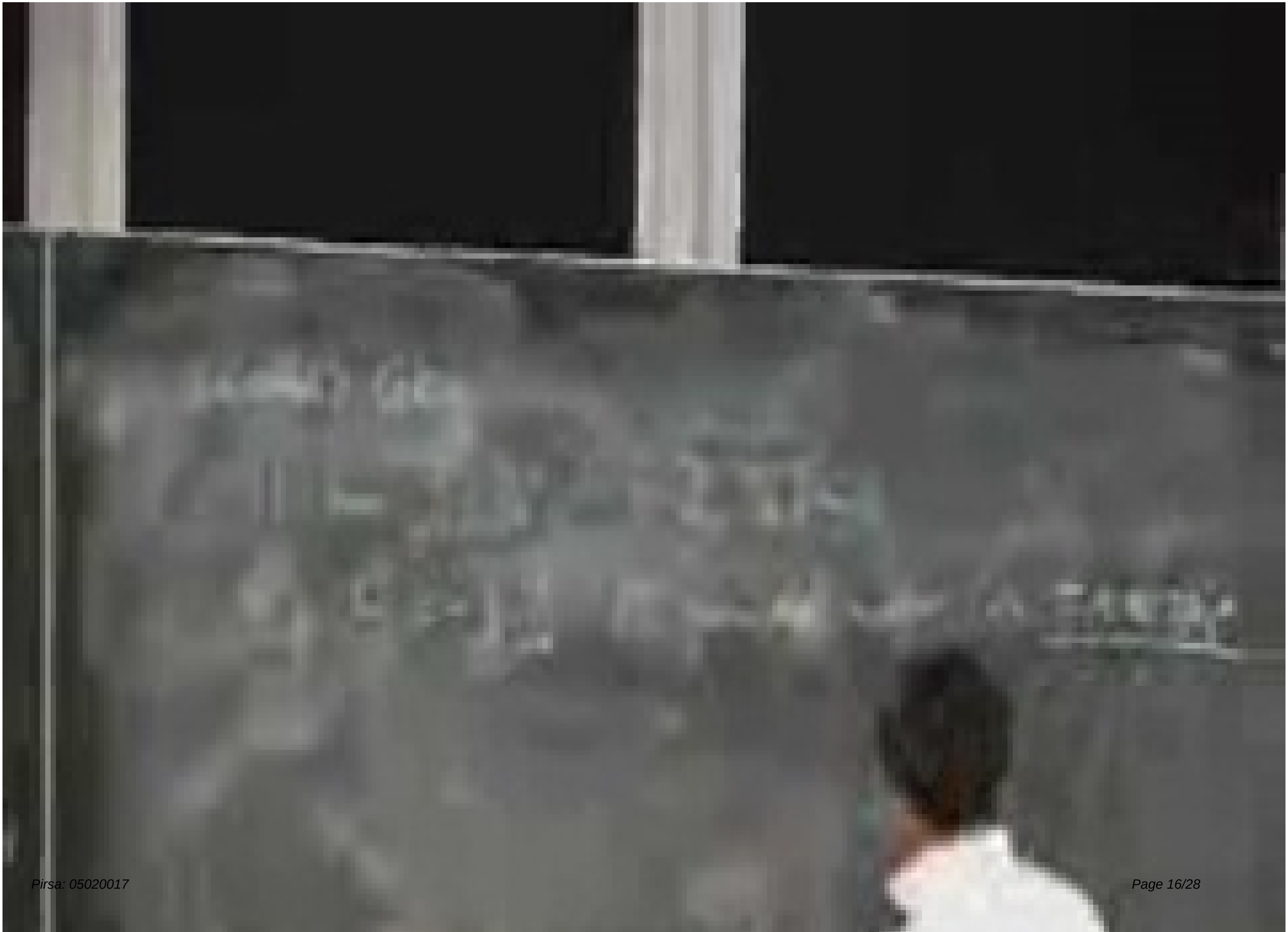

{D, Q} = 0
S = -1/2 ∫ d²x dθ⁺ dθ⁻ (g_ab + B
D₊φᵃ D₋φᵇ
B field is not well defined

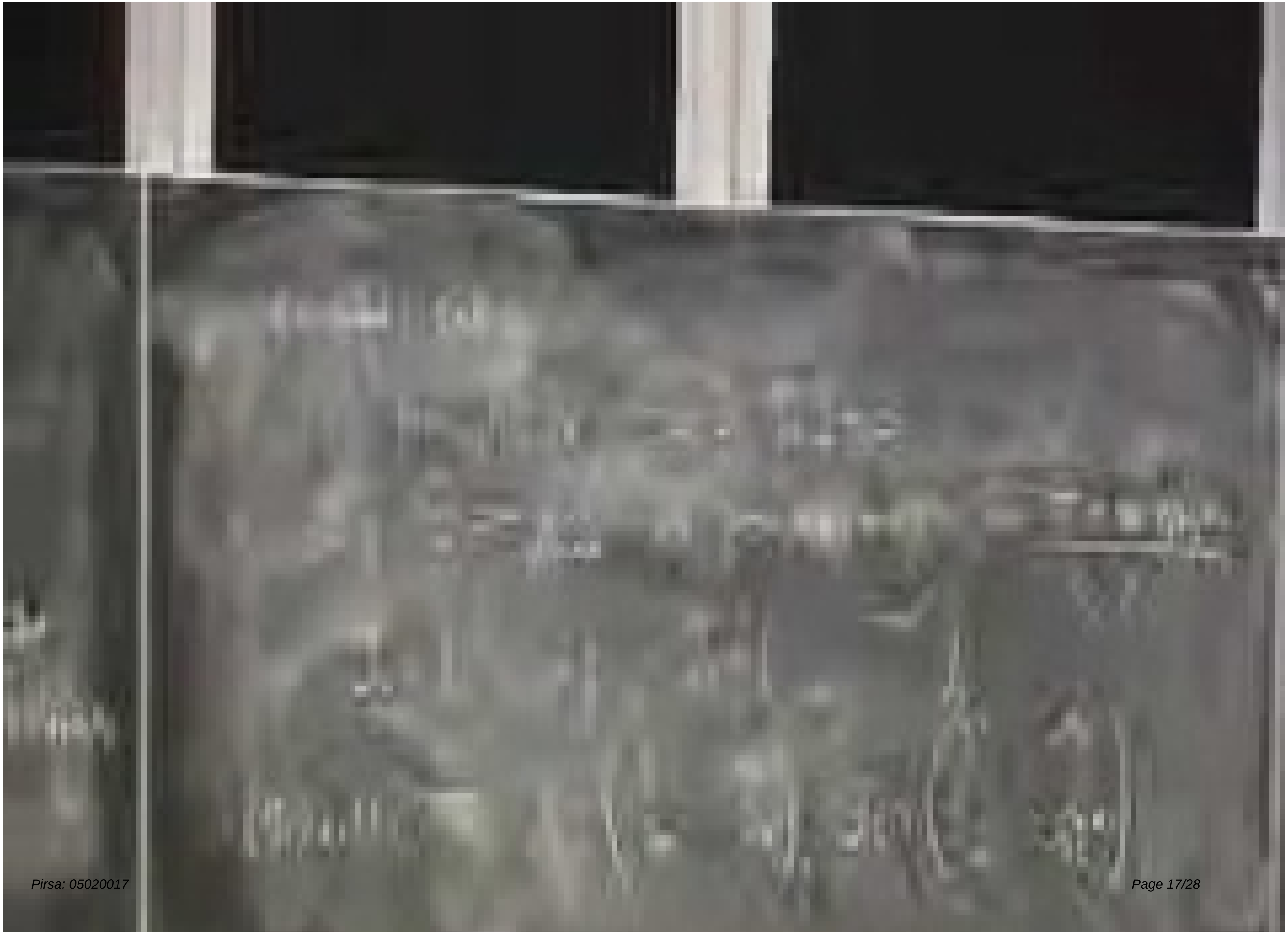


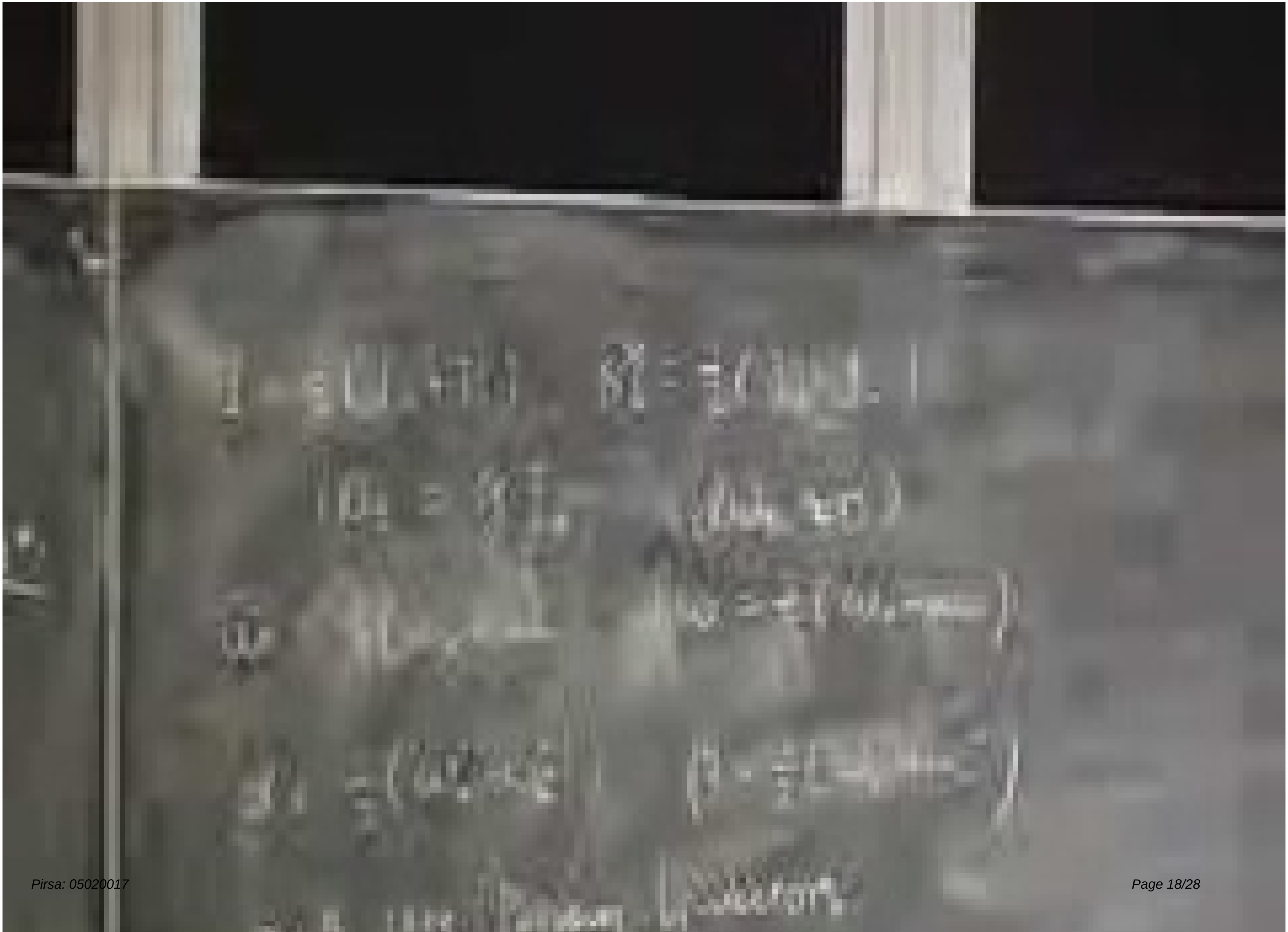


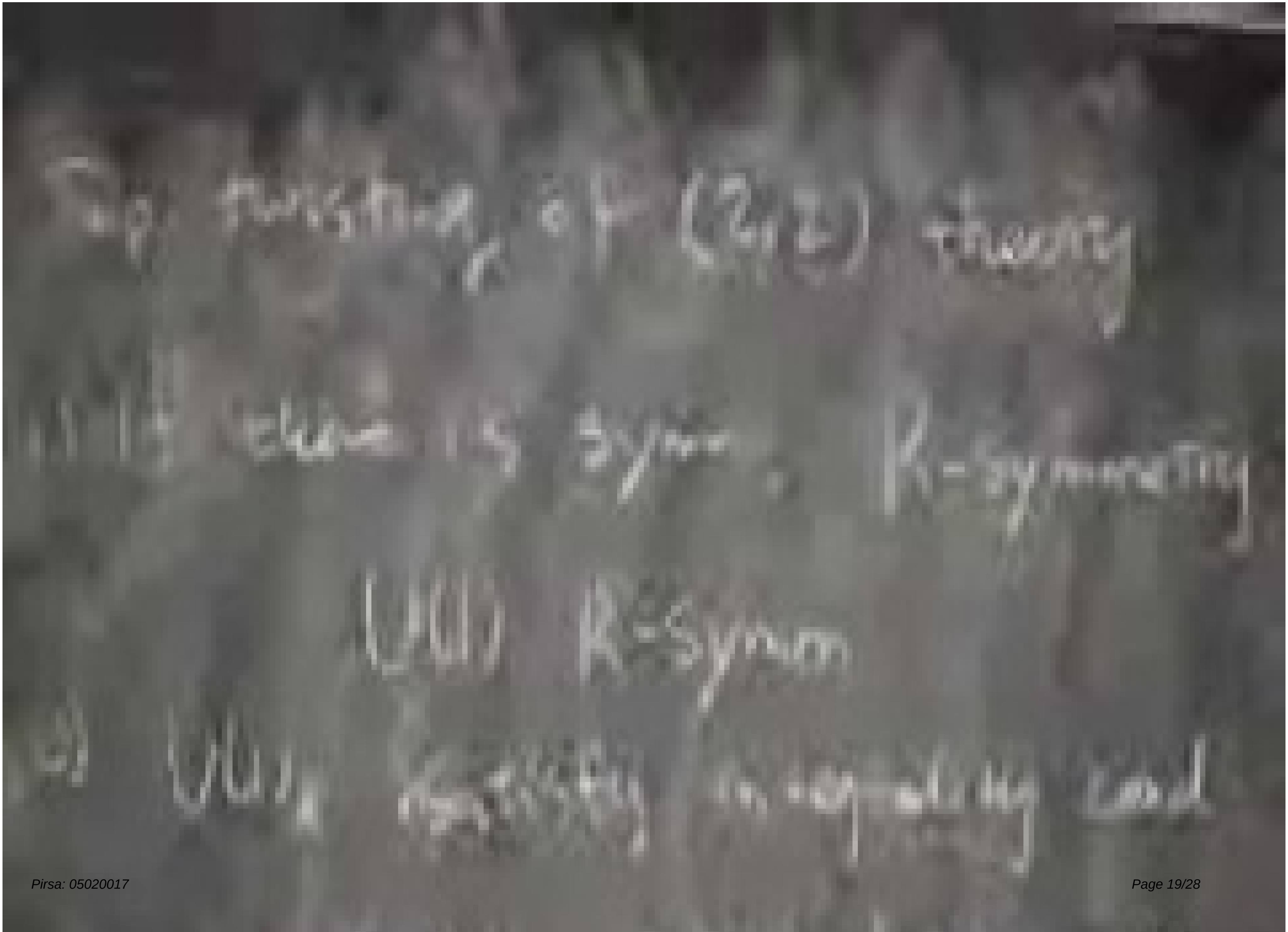











Top. twisting of (2,2) theory
R-symmetry
R-symm