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FAST-PARTICLE EMISSION AS A PROBE OF THE ENERGY DISSIPATION MECHANISM IN DEEP-INELASTIC REACTIONS

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Abstract

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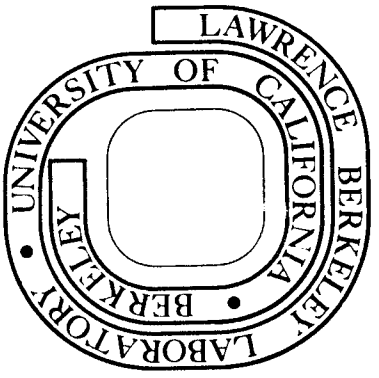

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Fast-Particle Emission as a Probe of the Energy Dissipation Mechanism in Deep-Inelastic Reactions.*

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The nature of the energy dissipation mechanism in deep-inelastic reactions is still largely undetermined. In particular, it is not clear whether the large energy damping is due to one-body viscosity, two-body viscosity or some other mechanism. A signature of the energy dissipation process might be found in the study of the light charged particles emitted in deep-inelastic reactions. To this end we have fixed a Z-telescope at 14° and measured the coincident proton angular distribution from very forward to very backward angles on both sides of the beam axis. In addition, we measured the multiplicity of γ rays emitted by the reaction products utilizing six 3-inch by 3-inch NaI counters. With this experimental system, we measured all possible Z-γ, p-γ, Z-p and Z-p-γ coincidences as well as singles in all telescopes. The results of the particle-particle angular correlation and the γ ray multiplicities will be discussed.

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