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180° Production of Deuterons and Tritons in Relativistic Heavy-Ion Collisions

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Abstract

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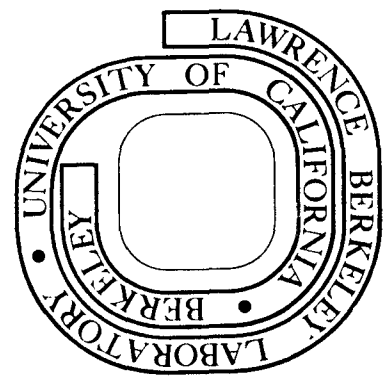
180° PRODUCTION OF DEUTERONS AND TRITONS IN
RELATIVISTIC HEAVY-ION COLLISIONS

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180° Production of Deuterons and Tritons in Relativistic Heavy-Ion Collisions.* J.W.HARRIS, S.A. CHESSIN, J.V.GEAGA, J.Y.GROSSIORD,† D.L.HENDRIE, L.S. SCHROEDER, R.N.TREUHAFT, and K. VAN BIBBER, Lawrence Berkeley Laboratory. -- Continuing our study of 180° particle production in relativistic collisions, deuterons and tritons were detected in the bombardment of C, Al, Cu, Sn, and Pb targets by 0.4 to 2.1 GeV/n projectiles ranging in atomic mass from protons to argon. Systematics of the incident energy dependence and target and projectile A-dependence of the inclusive cross sections were studied. Information on the production of these light nuclear fragments provide important tests for various existing models. The experimental results will be compared to predictions for light fragment production assuming coalescence.¹ Calculations have also been performed using the "firestreak" model² and will be compared to the data. Implications of the results of this study on other models for the production of light fragments will be discussed.

*Work supported by the U.S.Dept. of Energy.

†Address: Institut de Physique Nucleaire de Lyon.

¹S.T.Butler and C.A.Pearson, Phys. Rev. Lett. 7, 69 (1969), and Phys. Rev. 129, 836 (1963).²J.Gosset et al., Phys. Rev. C18, 844 (1978).

Submitted by

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