

NOTE

**A Program to Calculate Particle Spectra
Produced in High-Energy Proton-Proton Collisions by
the Two-Temperature Statistical Model¹**

A program is available to calculate particle spectra produced in high-energy proton-proton collisions by the two-temperature statistical model of Wayland and Bowen [1]. The two-temperature statistical model has been shown to give an accurate representation of particle spectra for p - p collisions with an incident energy greater than 15 GeV. The differential cross sections

$$\frac{d^2\sigma}{dp^* d\Omega^*} \quad \text{and} \quad \frac{d^2\sigma}{dp d\Omega}$$

as functions of p , p^* , θ , θ^* , and E_0 are calculated. p is the momentum of the secondary, Ω is the solid angle, θ is the angle of the secondary with respect to the direction of the incident proton and E_0 is the energy of the incident proton. Starred quantities are the center of mass system and unstarred quantities are in the laboratory system. The parameters for π^\pm , K^\pm , p and \bar{p} spectra are given.

To give a flexible format, the program is written in both FORTRAN II and IV. Function subprograms are included to compute the required Bessel functions.

REFERENCE

1. J. R. WAYLAND and T. BOWEN, *Nuovo Cimento* **48A**, 663 (1967); J. R. WAYLAND (To be published).

J. R. WAYLAND

*Department of Physics and Astronomy
University of Maryland
College Park, Maryland*

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