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Paper will be presented by P. A. Berardo (put • in abstract)

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A. SUBJECT CATEGORY:

Physics of:

- Diagnosis
- Nuclear Medicine
- Radiation Therapy
- Hyperthermia
- Other _____

Read instructions carefully before typing on this form:

Reducing Secondary Dose Calculation Times.

P. A. Berardo,*M. A. Paciotti, S. Zink, J. N. Bradbury, Los Alamos Scientific Laboratory, Los Alamos, NM 87545; H. Bichsel and A. R. Smith, Univ. of New Mexico Cancer Research and Treatment Center, Albuquerque, NM 87131.

In dose calculations for radiation therapy using ray tracing techniques and CT data, the entire energy of secondary particles must be accounted for. A considerable saving in computation time may be achieved if the dose distribution from secondaries in space can be decomposed into short and long range components. Then only a fraction of cases must be calculated for the long range component to maintain statistical accuracy. For example, neutrons from pion stars are produced isotropically and after about 5 cm the integral neutron dose increases nearly linearly with distance. It is sufficient to calculate long range dose for only one in fifteen particles.

Supported by USPHS Grant No. CA-16127 and from the National Cancer Institute and US DOE.

B. Designation:

- Basic
- Clinical
- Technical
- Other _____

C. Mode:

- Poster Presentation
- Oral Presentation
- Either Poster or Oral Presentation

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