

## **MONTE CARLO SIMULATION OF $Z \geq 2$ ION TRACK DISTRIBUTION IN BONE TISSUE**

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### **ABSTRACT**

Heavy ion tracks distribution up to 2 GeV / amu in bone tissue was simulated in order to assess the biological effects of the radiation. Calculation of ion tracks distribution in the target was materialized using the code TRIM (1).

Average energy transferred by ion tracks in nuclear as well as in atomic collision is obtained and pattern of ion tracks is analyzed for comparison. The computer program provides particularly high computer efficiency, when a new analytical formula used in determining nuclear scattering angles (2). Heavy ion therapeutic parameters, such as the width of the spread-out Bragg peak (Figure 1), Q values and H dose equivalent are obtained and compared with existing data (3).

- (1) E. Steinbauer et al.  
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- (2) J. P. Biersack  
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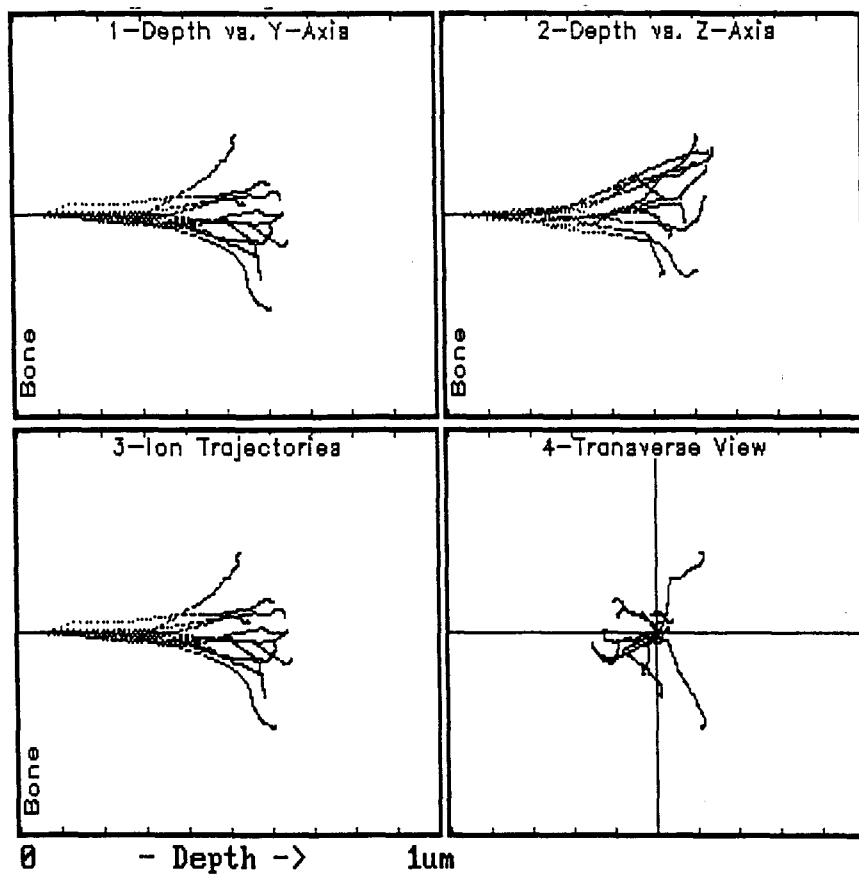


Figure 1. 100 keV He ion tracks distribution simulation in bone tissue.