Study of numerical methods for the solution of the transport equation. The first method studied is the discrete ordinates method, usually abbreviated as the Sn method. This approach solves the transport equation for the angular flux along a particular directions and uses a quadrature rule to estimate integrals.

To present the Sn method we being with the multigroup transport equation for a particular direction:

Solve the following problem and submit a detailed report, including a justification of why a reader should believe your results and a description of your methods and iteration strategies.

1. The diamond-difference spatial discretization.

Beginning with the slab-geometry discrete-ordinates transport equation for a single group,

Where the moments are quadrature sums,

We integrate this equation over a generic zone ranging from zi-1/2 to zi+1/2 and divide by hz to get for i=1,…,I