

**ABSTRACT:**

The accepted dosimetric measure of electromagnetic (EM) exposure is the specific absorption rate (SAR), which is defined as the power absorbed per unit mass of tissue. International standards for compliance testing of hand-held mobile communication devices define various cubical averaging schemes to obtain the spatial peak averaged specific absorption rate. In this paper, a numerical approach to illustrate the validation and uncertainty contributions of a SAR post-processing algorithm is described. Simplified interpolation and extrapolation techniques to calculate the 1g SAR for a 2.5 mm mesh grid are evaluated. Furthermore, using linear, nearest, and spline interpolation in MATLAB, the effects of the extrapolation order on the assessment of the resultant error are examined.