1077-41-1163   **Willi Freeden*** (`freeden@mathematik.uni-kl.de`), Germany. *Approximation based on integral formulas for star-shaped surfaces.*

In the first part the presentation is concerned with the development and application of integral formulas on the sphere such that equidistribtution, best approximation, and spline interpolation as well as their interrelations become derivable by use of an explicitly available remainder representation (reflecting the (linearized) 'curvature energy' in terms of the Beltrami operator).

The second part deals with the extension of the spherical ideas and concepts to geophysically relevant star-shaped surfaces such as ellipsoid, geoid, (real) Earth's surface. (Received September 17, 2011)