1084-52-169 **Paul Goodey** and **Wolfgang Weil*** (wolfgang.weil@kit.edu). *Sums of Sections and the General Minkowski Problem.* Preliminary report.

For $2 \leq k \leq d-1$, the k-th mean section body, $M_k(K)$, of a convex body K in $\mathbb{R}^d$, is the Minkowski sum of all its sections by k-dimensional flats. We show that the characterization of these mean section bodies is equivalent to the solution of the general Minkowski problem, namely that of giving the characteristic properties of those measures on the unit sphere which arise as surface area measures (of arbitrary degree) of convex bodies. This equivalence arises from an integral representation of the support function of $M_k(K)$ in terms of the $(d+1-k)$-th surface area measure of K. The latter is obtained by Fourier transform techniques and involves the functions introduced by Berg (1969) in his solution of the Christoffel problem. (Received August 31, 2012)