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**Towards a theory for arbitrarily shaped sound field reproduction systems**

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The simple source approach predicts that a distribution of appropriately driven loudspeakers (secondary sources) enclosing a given listening area is suitable for the physical recreation of any desired exterior virtual sound field within that listening area. A specific class of sound reproduction approaches (e.g. higher-order Ambisonics) is based upon the explicit solution of the simple source formulation with respect to the secondary source driving function. To the knowledge of the authors, such an explicit solution is currently only available for specific geometries of the sound reproduction system. This contribution presents a theoretical framework for the derivation of the explicit solution for the driving function of arbitrarily shaped secondary source arrangements. It is based upon the expansion of the reproduced wave field into a series of orthogonal basis functions. These basis functions emerge from the respective underlying geometry. It is shown that most of the sound reproduction systems that are based upon the simple source formulation can be seen as specialization of the presented approach to a particular geometry and basis function.