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Some boundary value problems for the wave equation (or for a class of weakly hyperbolic equations) in \mathbb{R}^n ; are studied, which are multidimensional analogues of Darboux problems in the plane. Now, it is known that the multidimensional Protter problem is not well-posed, in contrast to the plane Darboux problem. For the wave equation an infinite number of necessary and sufficient conditions for the classical solvability is found. The Semi-Fredholm classical solvability of 3+1 -D Protter problem is proved. To avoid this infinite number of necessary conditions in the frame of classical solvability, the concept of generalized solutions with a possible strong singularity at one fixed point was introduced. The exact asymptotic singularity of the generalized solution is found. All these problems are connected to the multidimensional hyperbolic-elliptic Protter Problem, the statement of which is given in 1952. This is a joint work with Rudolf Scherer from University of Karlsruhe, Germany and Todor Popov, University of Sofia. (Received September 02, 2009)