# Decision trees in the problem of defining the aircraft element class for the subsequent determination of surface pressure

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*The article describes the solution of the problem of classification of aircraft surface elements with the subsequent target determination of the pressure coefficient at the body constituent parts by the method of local surfaces. A sectional body including spherical, conical, planar and cylindrical surfaces was considered as an object for classification and characterization. The decision tree was used as a method for classification. The grid on the body was obtained by the grid self-organization algorithm. To estimate aerodynamic characteristics, initial-analytic approximations and exact dependences were used. The results were compared with the calculated data obtained in the framework of a rigorous mathematical formulation. The results of the target application of the method of local surfaces are in good agreement with the calculations. The proposed method can be used both for independent estimates of the sectional body streamlining parameters and for specifying the initial approximation in calculations within the framework of a rigorous mathematical formulation of the system of gas dynamics equations.*

***Keywords:*** *supersonic flow, target determination of aerodynamic characteristics, classification, decision tree*

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