The Bernstein problem in dimension 6. (English summary)


In the Bernstein problem in population genetics, an explicit description is sought of all evolutionary operators which leave the state of the population unchanged. In algebraic terms, this corresponds to finding all stochastic bases, with associated multiplication constants, in a Bernstein algebra of a given dimension. This paper deals with such algebras of dimension 6 which are nonregular and nonexceptional, in the terminology introduced by Yu. Lyubich, who solved all regular and exceptional cases. A complete description is given of the stationary evolutionary operators of type (3,3). In combination with results given by the author for operators of type (4,2) [J. Algebra 181 (1996), no. 2, 613–627; MR1383485 (97c:17048)], this completes the solution of the Bernstein problem of dimension 6.

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