

# On the perfectness of Nikishin systems\*

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## Abstract

In 1980, E.M. Nikishin introduced general systems of Markov type functions which are called Nikishin systems. They have attracted great attention in connection with the study of the convergence of their simultaneous Hermite-Padé approximation and the asymptotic properties of the common denominator of these rational approximants. Multi-indices for which the common denominator of the corresponding Hermite-Padé approximation has maximum degree are called normal. The concept of normal index for general systems of functions was introduced by K. Mahler. Systems for which all multi-indices are normal receive the name of perfect systems. We prove that Nikishin systems are perfect and give some applications of this result.

## References

- [1] K. Mahler, *Perfect systems*, *Compositio Math.* **19** (1968), 95–166
- [2] E.M. Nikishin, *On simultaneous Padé approximants*, *Math. USSR Sb.* **41** (1980), 409–425.

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