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Holonomic systems for period mappings. (English) Zbl 1329.57034
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Summary: Period mappings were introduced in the sixties to study variation of complex structures of families of algebraic varieties. The theory of tautological systems was introduced recently to understand period integrals of algebraic manifolds. In this paper, we give an explicit construction of a tautological system for each component of a period mapping. We also show that the D-module associated with the tautological system gives rise to many interesting vanishing conditions for period integrals at certain special points of the parameter space.

MSC:

- [57R35](#) Differentiable mappings in differential topology
- [14J10](#) Families, moduli, classification: algebraic theory
- [53C29](#) Issues of holonomy in differential geometry
- [81Q70](#) Differential geometric methods, including holonomy, Berry and Hannay phases, Aharonov-Bohm effect, etc. in quantum theory

Keywords:

[tautological systems](#)

Full Text: [DOI](#) [arXiv](#)

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