

## **Finite Galois covers, cohomology jump loci, formality properties, and multinet**

ALEXANDRU DIMCA AND STEFAN PAPADIMA

**Abstract.** We explore the relation between cohomology jump loci in a finite Galois cover, formality properties and algebraic monodromy action. We show that the jump loci of the base and total space are essentially the same, provided the base space is 1-formal and the monodromy action in degree 1 is trivial. We use reduced multinet structures on line arrangements to construct components of the first characteristic variety of the Milnor fiber in degree 1, and to prove that the monodromy action is non-trivial in degree 1. For an arbitrary line arrangement, we prove that the triviality of the monodromy in degree 1 can be detected in a precise way, by resonance varieties.

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