GAUSS-MANIN CONNECTIONS FOR ARRANGEMENTS, I  EIGENVALUES

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Abstract. We construct a formal connection on the Aomoto complex of an arrangement of hyperplanes, and use it to study the Gauss-Manin connection for the moduli space of the arrangement in the cohomology of a complex rank one local system. We prove that the eigenvalues of the Gauss-Manin connection are integral linear combinations of the weights which define the local system.

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