

Affine Geometry and the Legendre Transform

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The combinatorial duality used in Gross-Siebert approach to mirror symmetry is the discrete Legendre transform of a polarized integral tropical manifold (B, P, ϕ) where B is an affine manifold with singularities, P is its polyhedral decomposition, and ϕ is a multi-valued piecewise linear function on it. In this talk we will give precise definitions of these objects and the discrete Legendre transform, accompanied by a detailed treatment of an example coming from reflexive polytopes.