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Variational principles for systems with configuration space isotropy

This presentation considers Lagrangian systems on tangent bundles, with lifted symmetries and configuration space isotropy. We use a twisted parametrisation of the phase space corresponding to phase space slices based at zero points of tangent fibres. Using Hamilton's variational principle with appropriate constraints, we deduce the Lagrangian bundle equations in the twisted coordinates. This complements earlier work describing the dynamics on the cotangent side.