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	authors	<ul style="list-style-type: none">Asher YahalomDonald Lynden-Bell	authors	<ul style="list-style-type: none">Asher YahalomDonald Lynden-Bell		
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	abstract	Variational principles for magnetohydrodynamics were introduced by previous authors both in Lagrangian and Eulerian form. In this paper we introduce simpler Eulerian variational principles from which all the relevant equations of barotropic magnetohydrodynamics can be derived. The variational principle is given in terms of six independent functions for non-stationary barotropic flows and three independent functions for stationary barotropic flows. This is less then the seven variables which appear in the standard equations of barotropic magnetohydrodynamics which are the magnetic field \vec{B} — the velocity field \vec{v} — and the density ρ . The equations obtained for non-stationary barotropic magnetohydrodynamics resemble the equations of Frenkel, Levich & Stilman FLS. The connection between the Hamiltonian formalism introduced in FLS and the present Lagrangian formalism (with Eulerian variables) will be discussed. Finally the relations between barotropic magnetohydrodynamics topological constants and the functions of the present formalism will be elucidated.	abstract	Variational principles for magnetohydrodynamics were introduced by previous authors both in Lagrangian and Eulerian form. In this paper we introduce simpler Eulerian variational principles from which all the relevant equations of barotropic magnetohydrodynamics can be derived. The variational principle is given in terms of six independent functions for non-stationary barotropic flows and three independent functions for stationary barotropic flows. This is less then the seven variables which appear in the standard equations of barotropic magnetohydrodynamics which are the magnetic field \vec{B} the velocity field \vec{v} and the density ρ . The equations obtained for non-stationary barotropic magnetohydrodynamics resemble the equations of Frenkel, Levich & Stilman $\text{\cite{FLS}}$. The connection between the Hamiltonian formalism introduced in $\text{\cite{FLS}}$ and the present Lagrangian formalism (with Eulerian variables) will be discussed. Finally the relations between barotropic magnetohydrodynamics topological constants and the functions of the present formalism will be elucidated.		
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