

The Principle of Electromagnetohydrodynamics (EMHD) in Stellar Metamorphosis

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Abstract: It is reasoned that stars are electromagnetohydrodynamic structures when they are young, not hydrostatic as per nuclear models. A simple principle is given.

A new principle of stellar evolution is presented in accordance with the general theory of stellar metamorphosis. It adjusts the false assumption that stars are hydrostatic structures. They are not hydrostatic, they are fluid dynamic and are subject to electromagnetic forcing, involving magnetic and electric fields. This means they are electromagnetohydrodynamic (EMHD) systems and their structures are based on interactions of plasma (ionized matter).

“All young stars are electromagnetohydrodynamic systems, and their structure is determined by the interactions of ionized matter.”

Any theory in addition to the nuclear theory of young stars or models that assume young stars are hydrostatic structures is false, because young stars are actually observed to be fluid and dynamic. As well in the general theory, the fluid dynamic regime morphs into less electromagnetically forced to more reliant on actual hydrodynamic and pneumatic pressures (with much less ionized matter) under much higher temperatures. This all happens as the star cools and loses mass to solar wind, flaring and photoevaporation, and becomes a gas giant star.