

## Dynamic Equilibrium of the Parker and Parker–Jeans Instabilities

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We have studied the nonlinear evolution of the interstellar gaseous disks in the presence of magnetic and gravitational fields. Our objective is to investigate what their final states are. We modeled the Galactic ISM as infinite disks of magnetized gas, which are under the influence of one, external gravity, two, self gravity and three, both gravities, respectively. Here we confined ourselves to the perturbations that develop Parker-type instability. Whenever the vertical galactic gravitational acceleration increases with altitude, the disks develop into equilibrium states, which are different from their initial equilibrium configurations. All the final configurations form corrugated pattern with respect to the galactic plane. Resulting structures are perpendicularly aligned with the initial magnetic fields.