

Magnetorotational instability: a review

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The abstract goes here like this.

1. Introduction

Background

1.1. Example citations

General papers: Julien & Knobloch (2010), Chandrasekhar (1960), Acheson & Hide (1973), Balbus & Hawley (1991)

Experiments: Gailitis *et al.* (2002), Sisan *et al.* (2004), Stefani *et al.* (2006), Stefani *et al.* (2007), Ji (2010), Seilmayer *et al.* (2012)

Numerical simulations: Kageyama *et al.* (2004), Liu (2008), Gissinger *et al.* (2011), Travnikov *et al.* (2011), Kirillov *et al.* (2012), Zhao & Zikanov (2012)

2. Theoretical Work

Derive governing equations, linearize to small perturbations, and determine conditions for stability.

2.1. Governing Equations

Julien & Knobloch (2010) states the governing equations as

$$\rho \left[\frac{\partial u}{\partial t} + (u \cdot \nabla)u \right] = \nabla p - \frac{1}{2\mu_0} \nabla B^2 + \frac{1}{\mu} (B \cdot \nabla)B \quad (2.1)$$

$$\frac{\partial B}{\partial t} + (u \cdot \nabla)B = (B \cdot \nabla)u \quad (2.2)$$

$$\nabla \cdot u = \nabla \cdot B = 0 \quad (2.3)$$

where μ_0 , B

2.2. Linearization

Linearize governing equations to small perturbations

2.3. Stability Analysis

3. Experimental Work

Discuss on experimental work that has been done related to this topic.

4. Numerical Work

Have there been any numerical experiments done that involve the topic.

5. Conclusion

Concluding remarks

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