Abstract Submitted
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Plasma (Accretion) Disks with High Magnetic Energy Densities[1]

F. ROUSSEAU, E.N.S., Paris, B. COPPI — "Corrugated" plasma disks[2] can form in the dominant gravity of a central object when the peak plasma pressure in the disk is of the same order as that of the pressure of the "external" magnetic field, while the magnetic field resulting from internal plasma currents is of the same order as the external field. The corrugation refers to a periodic variation of the plasma density in a region around the equatorial plane. The considered structure represents a transition between a "classical" accretion disk and a "rings sequence" configuration[2]. The common feature of the "corrugated" and the "rings sequence" configurations is the "crystal" structure[3] of the magnetic surfaces that consist of a sequence of pairs of oppositely directed toroidal current density filaments. The connection between the characteristics of these configurations and those of the marginally stable ballooning modes that can be found in a model accretion disk[4] is pointed out and analyzed.

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[2]B. Coppi and F. Rousseau, to be published in *Astroph. J.*, April 2006
[3]B. Coppi, *Phys. Plasmas* **12**, 057302 (2005).
[4]B. Coppi and P.S. Coppi, *Phys. Rev. Letters* **87**, 051101 (2001).

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