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## **An Introduction to Topologically Protected Waves in MHD and Plasmas**

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Topological phase, which has received much attention in condensed matter physics, is now believed to play an important role in many areas of physics and is now being fruitfully applied to plasmas. I shall give a brief introduction to the theory of topological phase (including a discussion of Berry phase, Berry connection, Berry curvature and Chern number) and also the important phenomena of bulk-boundary correspondence and the existence of localized topologically protected unidirectional modes at the interface between topologically distinct phases. I shall then give a couple of simple examples involving waves in rotating fluids, MHD and simple magnetized cold plasmas.

References

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