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	Altri autori (Persone)	JacakJanusz
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Sommario/riassunto

In the present treatise progress in topological approach to Hall system physics is reported, including recent achievements in graphene. The homotopy methods of braid groups turn out to be of particular convenience in order to grasp peculiarity of 2D charged systems upon magnetic field resulting in Laughlin correlations. The real progress in understanding of structure and role of composite fermions in Hall system is provided. The crucial significance of carrier mobility apart from interaction in creation of the fractional quantum Hall effect (FQHE) is described and supported by recent graphene