

Abstract Submitted
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The doubling of von Klitzing's constant h/e^2 KESHAV SHRIVASTAVA, University of Malaya — The Hall resistivity is found to become a function of spin. For positive spin, one value is found but for negative sign in the spin, another value occurs. In this way, there is never only one value of the resistivity but there is doubling of values. The value of the von Klitzing's constant is a special case of more general dependence of resistivity on the spin. We investigate the effect of Landau levels. For extreme quantum limit, $n=0$, the effective charge of the electron becomes $(1/2)ge$. The fractional charge arises for finite value of the angular momentum. The fractional as well as the integral values of the charge are in full agreement with the experimental data. The generalized constant is $h/[(1/2)ge]$ which under special conditions becomes h/e^2 which is the von Klitzing's constant [1]. [1] K. N. Shrivastava, Phys. Lett. A 113,435(1986); A326,469(2004); Mod. Phys. Lett. 13,1087(1999); 14,1009(2000); AIP Conf. Proc. 909, 43-49(2007); 909.50-56(2007);1017, 422-428(2008);1017,326-330(2008); 1017, 47-56(2008), Proc. SPIE(USA)7155,71552F1-8[7155.86](2008).

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