Metal doping effects on the skyrmion Cu$_2$OSeO$_3$ DA-YE CHEN, KUO-FENG TSENG, CHIH-CHIEH CHOU, SUDIP MUKHERJEE, Department of Physics, National Sun Yat-Sen University, Kaohsiung 804, Taiwan, JIM-LONG HER, Institute for Solid State Physics, University of Tokyo, Tokyo, Japan, HELMUTH BERGER, Institutes of Physics of Complex Matter, Ecole Polytechnique Federale de Lausanne (EPFL), CH-1015 Lausanne, Switzerland, HUNG-DUEN YANG, Department of Physics, National Sun Yat-Sen University, Kaohsiung 804, Taiwan — There is a considerable research interest in skyrmion whose magnetic properties have a remarkable characteristic as a vortex-like spin orientation. Recently, neutron scattering and Lorentz transmission electron microscopy measurements showed that Cu$_2$OSeO$_3$ exists a skyrmion state. We have doped transition metals (Fe, Mn, V) in Cu$_2$OSeO$_3$ and measured dc magnetization and ac susceptibility by scanning magnetic field. The Fe and Mn doping effect on the A phase in T-H phase diagrams of Cu$_2$OSeO$_3$ has been studied. Interestingly, the doping with V is different from that with Fe and Mn. The physical significance for metal doping on the skyrmion Cu$_2$OSeO$_3$ will be discussed.

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