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Temperature dependence of current induced magnetization switching in spin-valves with a ferrimagnetic CoGd free layer LI GAO¹, XIN JIANG, IBM Almaden Research Center, San Jose, CA 95120, JONATHAN SUN, IBM T. J. Watson Research Center, Yorktown Heights, NY 10598, STUART PARKIN, IBM Almaden Research Center, San Jose, CA 95120 — Current induced magnetization switching (CIMS) has stimulated great interest recently due to its potential for applications, such as magnetic random access memories. Here, we report for the first time, a CIMS effect in spin-valves with a *ferrimagnetic* CoGd free layer. The temperature dependence of the CIMS effect in CoGd-Cu-CoFe spin-valves is explored. At temperatures well above and well below the magnetization compensation temperature (T_{MC}) of CoGd, a current flowing from the free layer to the CoFe fixed layer aligns the moments of the two layers parallel, and a current flowing in the opposite direction aligns them antiparallel. However, for intermediate temperatures just above T_{MC} , the current-induced alignment of the moments is reversed. We attribute this to the different compensation temperatures of the net magnetization and angular momentum of CoGd.

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