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Hansun T To* (hto1@worchester.edu), 486 Chandler St, Worcester, MA 01602. *Homogenization of Dynamic Materials.*

In this work we study the homogenization problem associated with propagation of long wave disturbances in active materials—materials whose properties exhibit not only spacial but also temporal inhomogeneities and whose study was initiated by Lurie in his pioneering works of 1997. We study the possibility of extending the homogenization procedure developed for ordinary composites to the case of dynamic materials. We uncover dramatic differences between the hyperbolic and the elliptic cases. We also compute all exact relations for 3D composite conductors exhibiting the Hall effect. (Received September 22, 2005)