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**Scanning hall probe microscopy of AC losses in YBCO coated conductors** RAFAEL DINNER, Geballe Laboratory for Advanced Materials, Stanford University, GEORGE DANIELS, Applied Superconductivity Center, University of Wisconsin, Madison, DAVID LARBALESTIER, Applied Superconductivity Center, University of Wisconsin, Madison, BRADY GIBBONS, Superconductivity Technology Center, Los Alamos National Laboratory, VLADIMIR MATIAS, Superconductivity Technology Center, Los Alamos National Laboratory, KATHRYN MOLER, Geballe Laboratory for Advanced Materials, Stanford University, MALCOLM BEASLEY, Geballe Laboratory for Advanced Materials, Stanford University — Magnetic imaging of current-induced vortex movement in superconducting films yields detailed information about dissipation and the path of an applied current. In our large-area scanning hall probe microscope, a flow cryostat cools a sample while a micro-Hall probe is rastered near its surface using a 3-axis stepper-motor-based stage with submicron resolution and centimeter scan range. Hall probe time traces taken at each point are assembled into movies of the flux penetration as a function of time over a cycle of AC sample current. YBCO films grown on several substrates are examined, including bicrystal substrates that induce a single grain boundary across the current path and metal tapes that give rise to a grain boundary network. An extended Bean model allows us to extract pinning forces and critical currents of the intragrain film and its grain boundaries.

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