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Analytic description of the transport $J_c(B)$ dependence of HTS thin films in small magnetic fields JENS HÄNISCH, FRANCESCO GRILLI, Los Alamos National Laboratory, Mail Stop T004, Los Alamos, 87545 NM, SEBASTIAN ENGEL, BERNHARD HOLZAPFEL, IFW Dresden, Helmholtzstr. 20, 01069 Dresden, Germany — Often, e.g. for deconvolution processes and field distribution calculations, an analytical function for the $J_c(B)$ dependence of high-T_c thin films is needed. The parameters of these functions should still have a physical meaning regarding the intrinsic and extrinsic sample properties. Starting with the modified Kim model, described by Xu *et al.*, we found an excellent function by introducing a sharpness parameter β. This parameter describes the shape of $J_c(B)$ between the low-field plateau (single vortex pinning regime) and the power-law dependence at higher fields. The temperature dependence of all fitting parameters will be discussed. Furthermore, the importance of the field dependence of the n value for distinguishing different pinning regimes will be illustrated.

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