1057-35-372 **Hiroya Ito*** (ito@ice.uec.ac.jp), Department of Mathematics, The University of Electro-Communications, 1-5-1 Chofugaoka, Chofu, Tokyo 182-8585, Japan. *On the dispersion curves for guided waves in an anisotropic plate.*

We consider time-harmonic waves with wavenumber k and angular frequency ω propagating in an infinite plate — a homogenous, anisotropic elastic layer bounded by two parallel plane surfaces satisfying fixed-fixed, free-free or fixed-free boundary condition — to an assigned direction parallel to the boundary. Such waves with parameter k, in an infinite set of wave modes, exhibit velocity dispersion, that is, their velocities $v = \omega/k$ depend on k as well as on the elastic stiffness and density of the material. We are interested in the dispersion curves $v = v(k)$, especially asymptotic behavior of each branch of them as $k \to \infty$. The problem is reduced to a certain eigenvalue problem of ODE with parameter k, where the eigenvalue is ω^2. In the isotropic case and a certain anisotropic case, explicit calculation enables us to obtain, for all the branches of dispersion curve, not only detailed asymptotic behavior as $k \to \infty$ but also asymptotic profile of the corresponding wave. In the general anisotropic case, we use, as a key tool, the theory of matrix polynomials — by means of factorization of matrix polynomials and the concept of elementary divisors, the asymptotic behavior of branches of dispersion curve in lower modes are examined. (Received January 26, 2010)