962-30-732 **Djamel Benbourenane*** (dben@math.niu.edu), Department of Mathematical Sciences, Northern Illinois University, Dekalb, IL 60115. *Solutions to Differential Equations with Slow Growth Coefficients.* Preliminary report.

Consider the linear differential equation of the form

$$f^{(n)} + A_{n-1}(z)f^{n-1} + \cdots + A_1(z)f' + A_0(z)f = 0,$$

where n is a positive integer and the coefficients are analytic functions in the unit disk. We show that if the coefficients satisfy $\int_0^{2\pi} int_0^r |A_j(se^{i\theta})| ds d\theta = O(\log \dfrac{1}{1-r})$ then the solution f must satisfy $T(r, f) = O\left(\log \frac{1}{1-r}\right), \ (r \to 1^-)$. On the other hand, if $int_0^{2\pi} int_0^r |A_j(se^{i\theta})| ds d\theta = O\left[\left(\dfrac{1}{1-r}\right)^{p_j}\right], \ p_j > 0$, then f satifies $T(r, f) = O(\frac{1}{1-r})$. A consequence for these results is that if for a fixed positive constant λ and for each j we have $I_\lambda(r, A_j) = \left(\frac{1}{2\pi} int_0^{2\pi} |A_j(re^{i\theta}|^\lambda d\theta\right)^{1/\lambda} = O\left(\frac{1}{1-r}\right)$,(respectively, $O\left[\left(\frac{1}{1-r}\right)^{p_j+1}\right]$), then the respective conclusions hold. (Received October 1, 2000)