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Aula A1 (CRM).

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**Zero Separation Results for Solutions  
of Second Order Linear Differential Equations**

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*Joint work with M. Chuaqui, J. Heittokangas and J. Rättyä.*We discuss the oscillation of solutions  $f \not\equiv 0$  of

$$f'' + A(z)f = 0, \tag{*}$$

assuming that  $A$  is either analytic the unit disc  $\mathbb{D}$  or entire.

It turns out that the growth of the maximum modulus of  $A$  determines the minimal separation of zeros of all solutions  $f \not\equiv 0$  of (\*), and vice versa. As a by-product of these findings, we rediscover the 1955-result of B. Schwarz, which asserts that

$$\sup_{z \in \mathbb{D}} |A(z)|(1 - |z|^2)^2 < \infty$$

if and only if the zero-sequences of all solutions  $f \not\equiv 0$  of (\*) are separated in the hyperbolic sense. The plane analogue of B. Schwarz's result shows that the Euclidean distance between any distinct zeros of any solution  $f \not\equiv 0$  of (\*) is uniformly bounded away from zero if and only if  $A$  is a constant.