1023-30-1198 **Gunter Semmler*** (semmler@ma.tum.de), Center of Mathematics, M6, Boltzmannstrasse 3, 85747 Garching, Germany. *Boundary interpolation problems for finite Blaschke products.*

Finite Blaschke products are functions of the form

$$B(z) = c \prod_{j=1}^{m} \frac{z - z_j}{1 - \overline{z}_j z},$$

where c is a unimodular constant and $z_1, \ldots, z_m$ are points in the complex unit disc $\mathbb{D}$. Recently, several authors studied the problem of finding Blaschke products that satisfy the interpolation conditions

$$B(t_k) = w_k, \qquad k = 1, \ldots, n,$$

for given points $t_1, \ldots, t_n, w_1, \ldots, w_n$ on the unit circle $\partial\mathbb{D}$. In contrast to the classical Nevanlinna-Pick interpolation problem, this problem is always solvable so that we can single out the solution of least degree m satisfying the interpolation conditions. The talk surveys different approaches to study uniqueness, stability, and computation of this minimal solution. In particular, a classification of all interpolation problems as fragile, elastic, or damaged will be explained, and the different properties of these classes will be exhibited. (Received September 25, 2006)