The first Ostrowski Prize in Mathematics is awarded

"To Professor Louis de Branges of Purdue University for developing powerful Hilbert space methods, leading him to a most surprising proof of the Bieberbach conjecture on power series for conformal mappings."

De Branges was born in Paris in 1932 but he grew up in the United States, where he received the Ph.D. degree in mathematics from Cornell University in 1957.

Strongly self-directed, he soon set out to develop a general theory that would provide a unified approach to the major unsolved problems in mathematical analysis - problems that had resisted the efforts of the best mathematicians over a period of time.

His first target was the important invariant-subspace problem: Does every bounded linear operator on Hilbert space have a nontrivial invariant subspace ?

He also worked on the most famous problem of them all. It concerns the Riemann zeta-function, defined by the infinite series

$$\zeta(x+iy) = \sum_{n=1}^{\infty} 1/n^{x+iy}.$$

According to Riemann's unproven hypothesis of around 1860, all the zeros of this function in the critical strip $0 < x < 1$ should lie on the central line, $x = \frac{1}{2}$.

A third major goal was the Bieberbach conjecture. Let $w = f(z)$ describe a one-to-one conformal or angle-preserving map from the unit disc $|z| = |x+iy| < 1$ to the plane of $w = u+iv$. The function $f(z)$ may be normalized so that it is represented by a power series of the form

$$f(z) = z + a_2 z^2 + \ldots + a_n z^n + \ldots .$$

After he demonstrated that $|a_2| \leq 2$, Bieberbach in 1916 surmised that the coefficients a_n might well satisfy the inequality $|a_n| \leq n$ for every value of n.

Applying his Hilbert space theory involving analytic functions, de Branges has greatly contributed to our understanding of the above and other problems. In particular, and to the surprise of a mathematical world accustomed to only small steps forward, de Branges in 1984 completely proved the Bieberbach conjecture and certain more general results on conformal maps.

The mathematical community is now looking forward to the publication of de Branges' new book on his method, entitled "Square summable power series". It also wishes him all possible sucess with his ongoing work on the other problems.

J. Korevaar