Extract from OP-SF NET

Topic #1 --------- OP-SF NET 21.2 -------- March 15, 2014

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Subject: Lee Lorch 1915-2014

Lee Lorch died in Toronto on February 28, 2014 at the age of 98. He was known as a mathematician who made life-long contributions to ending segregation in housing and education and to the improving the position of women and minorities in mathematics.

Born in New York City on September 20, 1915, Lorch was educated at Cornell University (1931-35) and at the University of Cincinnati (1935-41) where he completed his PhD under the supervision of Otto Szász, with a thesis "Some Problems on the Borel Summability of Fourier Series". He worked for the National Advisory Committee for Aeronautics (the predecessor of NASA) in 1942-42 and served in the US Army in India and the Pacific in 1943-46. While In India, he took time to contact local mathematicians and his second publication appeared in the Bulletin of the Calcutta Mathematical Society (1945).

Some of Lorch's early mathematical work, arising from the subject of his thesis dealt with the magnitude and asymptotics of the Lebesgue constants, known to form a divergent sequence in the case of Fourier Series. He studied the corresponding question when convergence is replaced by various kinds of summability (Fejér had considered Cesàro summability) in several papers including joint work with Donald J. Newman (whom he had known as an undergraduate at CUNY in the late 1940s). Later, he looked at corresponding questions for Jacobi series.

At the same time, Lee and his wife Grace were involved in the struggle against discrimination in housing (in New York), for equal treatment for Blacks in mathematical meetings, and for school integration in the US South. Resistance to these objectives and anti-communist hysteria led to his dismissal from or non-renewal in four academic positions in the period 1949-1957. This led to his taking up an offer from the University of Alberta in1959 from which he moved to York University (Toronto) in 1968.

His mathematical activity continued, during the 1950s, helped by summer visits to the San Francisco Bay Area where he had contact with some of the leading mathematicians (including Gabor Szegő) at Stanford and Berkeley. During this period, he began a continuing collaboration with Peter Szego, much of it related to differential equations and special functions. In Acta Math. 109 (1963), 55-73, Lorch and Szego showed that for $|v| > 1/2$, the first differences of the positive zeros of a general Bessel (cylinder)

function of order v form a completely monotonic sequence and conjectured that the second differences would form such a sequence for $|v|<1/2$. I was able to prove this for $1/3 \leq |v| < 1/2$ in 1977 but, as far as I know, the question is still unsettled for $|v|<1/3$.

In recent years, Lee Lorch was honoured by a number of universities and other organizations. The photo above was taken at an awards ceremony during the Joint Mathematics Meetings in New Orleans in 2007. Further biographical information, especially about his anti-discrimination activities can be found at
http://en.wikipedia.org/wiki/Lee_Lorch
and the links provided there.