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EDITORIAL

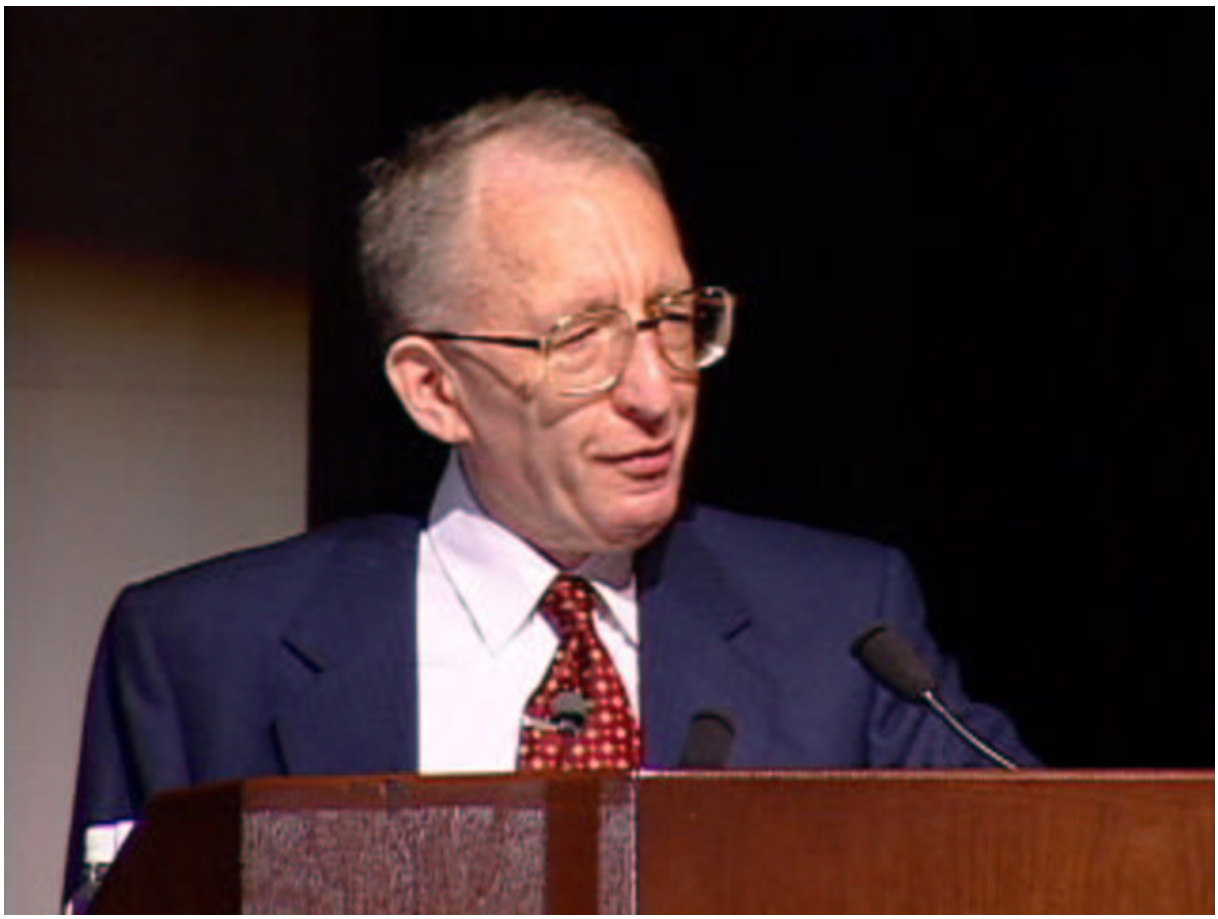

Figure 1: Alan Baker

Professor Alan BAKER will turn 70 on 19-08-09. (He was born on 19-08-1939). Ever since myself and R.Balasubramanian started, the periodical **"Hardy-Ramanujan Journal"** in 1978, Professor Baker has been encouraging us very much. We dedicate with great pleasure this volume (volume 32 to appear on 22nd December 2009) to his 70th Birthday.

We list below some of the mathematicians who were born in the month of August.

C HOOLEY 7th August 1928

Paul TURAN 18th August 1910

K RAMACHANDRA 18th August 1933

R.-J.HANS-GILL 28 August 1943

A. BAKER is well-known for his lower bounds for

$$|\beta_1 \log \alpha_1 + \beta_2 \log \alpha_2 + \cdots + \beta_n \log \alpha_n|$$

where α's and β's are algebraic numbers,(these are very deep results). A. BAKER found many important applications of his lower bound. A particulary interesting application of BAKER's inequalities was found by R.TIJDEMAN who showed that

$$x^m - y^n = 1 (x \geq 1, y \geq 1, m \geq 2, n \geq 2, mn \geq 6)$$

x, y, m, n all variable integers) implies that $\max(x, y, m, n)$ does not exceed an explicit effectively computable positive constant. A little later P.MIHAILESCU (once again using Baker's inequalities) showed that the above equation has the only solution $x = 3, y = 2, m = 2, n = 3$ (Thus solving a conjecture known as Catalan's conjecture), T.N.SHOREY K.RAMACHANDRA and M.JUTILA have got some important results (using BAKER's work and I.M.VINOGRADOV's work) on gaps between numbers with a large prime factor.

S.S. PILLAI's Conjecture

$ax^m - by^n = c$ (a, b, c fixed integers and $x \geq 1, y \geq 1, m, n$ variable positive integers) has only finitely many solutions(except in obvious cases.)

Hopefully PILLAI's conjecture can be solved by further developments in BAKER's Theory.

Perhaps we should have mentioned at the outset that BAKER was awarded Fields Medal (in 1970) for his extraordinary work. Incidentally it is good to recall here that "deep results" and "rich theories" should have peaceful coexistence for the benefit of our science (ie Math-

ematics). This remark is due to Paul TURAN who made this remark in his lecture "The Work of Alan BAKER" given in 1970.

The Editors

Figure 2: Pal Turan (A colour picture was not available)