# C.V. of G. Gát

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## Personal data

Name (and sex): György Gát (male).
Place and date of birth: Esztergom, Hungary, 1961. march 21.
family status, place of living: My wife Éva works in a primary school, we have a ten year old daughter, we live in Nyiregyháza, Hungary.

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## Grad., position

After finishing my studies in the secondary grammar school in Esztergom, I graduated as a mathematician at Loránd Eötvös University, Budapest, Hungary in 1985. I got the doctoral degree (summa cum laude) from Lajos Kossuth University, Debrecen, Hungary in 1987. The title of my dissertation was (in Hungarian) some application of the discrete Fourier transform.
In 1993 I got the so called candidate of mathematics from the Hungarian Academy of Sciences (with the result of 100%). The title of my dissertation was Vilenkin-Fourier series.

Since 1985 I work at department of mathematics, College of Nyíregyháza (Bessenyei College), Nyíregyháza, Hungary. Since 1991 I have a tanure track position and since 1994 I am a full professor.
In the college I give lecture in analysis and probability theory. I also give so-called special lectures in dyadic harmonic analyis and computer algebra (MAPLE V).

Since 1997 I have a part time position as an associate professor at Debrecen University, department of analysis. Among others, I give talks in approximation theory for students and Phd students as well. In 2000 I got the so-called habilitation from Debrecen University (with the result of 100%).

From 2005 I am the chair of the Institute of Mathematics and Computer Science at College of Nyíregyháza.

## Grants

1. Hungarian National Foundation for Scientific Research (OTKA F007347) (1992) for 3 years, I was the leader of the project. Dr. Rodolfo Toledo, a colleague at Bessenyei College was my partner in the project prolonged OTKA F020334) in 1995 for an additional four years.

2. From the Fund for Hungarian Research and Higher Education, the fund of the Hungarian Credit Bank in 1992 for inviting professors to give talks in dyadic harmonic analysis.

3. Scholarship, from the Fund for Hungarian Research and Higher Education, the fund of the Hungarian Credit Bank in 1993 for one year. From the Fund for Hungarian Research and Higher

Education, the fund of the Hungarian Credit Bank in 1994 for research in dyadic harmonic analysis.

4. Scientific Award from Szabolcs-Szatmár-Bereg County in 1995.

5. From the Hungarian ministry of Culture and Education in 1997 for research for two years.

6. First prize for one of my manuscripts in the competition of candidate (Phd) students from the Hungarian Scientific qualifying Committee (TMB) of the Hungarian Academy of Sciences in 1991.

7. 1998. György Alexits prize from the Hungarian Academy of Sciences for the outstanding results in research of analysis.

8. 2000. Bolyai Scholarship from the Hungarian Academy of Sciences for three years.

9. 2003. Award from the board of trustees of the Bolyai Scholarship belonging to the Hungarian Academy of Sciences for the outstanding results in research.

10. 2003. Széchenyi Scholarship from the Hungarian Ministry of Education for three years.

11. Hungarian National Foundation for Scientific Research (OTKA T 048780) (2005) for 4 years,

A colleague of mine, Dr. Toledo Rodolfo got his the PhD degree from Debrecen University. He studied an orthonormal system defined by me. So did another colleague, Dr. István Blahota. They, together with the third colleague, Károly Nagy also studies the dyadic harmonic analysis. Mr. Nagy got his Phd. degree also at Debrecen university. All of them are students of mine.

The Institute of Mathematics and Computer Sciences of my college has a mathematical journal: Acta Mathematica Academiae Paedagogicae Nyiregyhaziensis. It has 20 volumes. In 1997 my colleague Zoltán Kovács and me founded a new series of AMAPN. Since this time the journal appears only in electronic form (volume 14 and 15 appeared) and reviewed by Zentralblatt and Math. Reviews. Zoltán Kovács and me are the editors in chiefs of AMAPN. One can find the journal at http://www.emis.de/journals or http://www.emis.de/journals/AMAPN

Some aspects of my scientifical activity:

The field of my stientifical activity is the dyadic harmonic analysis.

In paper

Gát, G., Investigation of certain operators with respect to the Vilenkin system, Acta Math. Hungar., vol 61(1-2) (1993) 131--149. ZBL 805.42019, MR 94d:42035

I solved some problems with respect to the unbounded Vilenkin groups. One of the results in this paper close the investigations (set in the past three decades) with respect to the upper boundedness of the Sonuouchi operator on Vilenkin groups.
I have 19 citations for this paper.

In paper

Gát, G., On the lower bound of Sunouchi's operator with respect to the Vilenkin system, Analysis Math., vol 23 (1997) 259-272 ZBL 888.42017, MR 99f:42057

I prove some theorems with respect to the lower boundedness of the above mentioned operator. Nobody has achieved lower boundedness results before this.

I have 7 citations for this paper.

In papers

Gát, G., Vilenkin Fourier series and limit periodic arithmetical functions, Colloq Soc. J. Bolyai 58 Approx. Theory, Kecskemét, (Hungary) (1990) 315--332, ZBL 760.42013, MR 94g:42042

Gát, G., Orthonormal systems on Vilenkin groups , Acta Math. Hungar., vol 58(1-2) (1991) 193--198, ZBL ZBL 753.11027, MR 93e:42039

Gát, G., On almost even arithmetical functions via orthonormal systems on Vilenkin groups , Acta Arith., vol 49(2) (1991) 105--123, ZBL 725.11049, MR 92j:11083

I introduce a new function system on the Vilenkin groups which is a common generalization of several known system (e.g. the Walsh system, the character system of the 2-adic integers). In the third paper I applied this system in order to give a new method in approximation of limit periodic, almost even arithmetic functions.

In paper,

Gát, G., On the almost everywhere convergence of Fejér means of functions on the group of 2-adic integers, Journal of Approx. Theory, vol 90 (1) (1997) 88-96, ZBL 883.42021, MR 98m:42042

I verified the more than 25 year old conjecture of M.H. Taibleson, namely I proved that the (C,1) means of integrable functions on the group of the 2-adic integers converge a.e. to the function.

In paper,

Gát, G., Pointwise convergence of double Walsh-Fejér means, Annales Univ. Sci. Budapestiensis, Sect. Comp., vol 16 (1996) 173-184, ZBL 891.42014, MR 99b:42033

I proved the a.e. convergence of double Walsh-Fejér means of integrable functions on the unit square. The trigonometric version of this result is due Marczinkiewitz and Zygmund (1938).

In paper,

Gát, G., On the two-dimensional pointwise dyadic calculus, Journal of Approx. Theory vol 92 (2) (1998), 191-215, ZBL 897.42017, MR 99c:42049

I proved the fundamental theorem of dyadic calculus for 2 variable functions. I proved, that the for all integrable function on the unit square, the two-dimensional dyadic derivate of the dyadic integral of the function is a.e. equal to the function.

For this paper I have 9 citations.

I would like to emphasize two more papers of mine:

Gát, G., Pointwise convergence of the Fejér means of functions on unbounded Vilenkin groups, Journal of Approx. Theory vol 101 (1) (1999), 1-36, MR 1 724023

in which I proved for all $p > 1$ and $f \in L^p(G_m)$, where $G_m$ is any Vilenkin group (bounded or not) the (C,1) means of the Fourier series of f with respect to the character system of $G_m$ converge to f a.e. One of the main difficulties is that the $L^1$ norm of the Fejér kernels are not uniformly bounded on unbounded Vilenkin groups.

Gát, G., On the divergence of the (C,1) means of double Walsh-Fourier series, Proc. Amer. Math. Soc. 128 (2000), 1711-1720 ZBL 0976.42016, MR 1 657751

In 1992, Móricz, Schipp and Wade proved for functions in $L \log^+ L(I^2)$ ($I^2$ is the unit square) the a.e. convergence of the double (C,1) means of the Walsh-Fourier series  In this paper I demonstrate the sharpness of this result.
I am going to continue the short description of some selected papers of mine.