2021 年 10 月 22 日

参加報告書

群馬大学 理工学府 理工学専攻
電子情報・数理教育プログラム
小林研究室 博士 2 年 白雪妍

参加イベント

International Conference on Analog VLSI Circuits
（AVIC 2021）
https://www.avic2021.org/

開催場所

Bordeaux, FRANCE
The Conference was held at "Université de Bordeaux"
Address: 351 cours de la libération, 33400 Talence, France.
IMS Laboratory
Amphitheater JP Dom / Room Conférence

Bordeaux, FRANCE

開催期間

18th-21st October 2021

参加イベント概要

The Research Committee on Electronic Circuits of the Institute of Electrical Engineers of Japan (IEEJ) in cooperation with IMS Laboratory, the electronics research center of Univ.

Bordeaux held 2021 International Conference on Analog VLSI Circuits (AVIC) in Bordeaux, France on October 18-21, 2021 as an edition in hybrid mode: on-site and virtual.

AVIC is the successor of International Analog VLSI Workshop, which had been held for 24 years. The purpose of this conference is to discuss state-of-the-art ideas and results from researches on analog VLSI circuits and their applications. It has contributed to long-standing worldwide community of analog VLSI circuit experts in industry and academia.

群馬大学 小林研究室からの発表

(1) **Folding ADC for multi-bit ΔΣ AD modulator**

Xiongyan Li*, Tianrui Feng, Lengkhang Nengvang, Shogo Katayama, Jianglin Wei (Gunma University); Haijun Lin (Xiamen Institute of Technology); Kazufumi Naganuma, Kiyoshi Sasai, Junichi Saito (Alps Alpine Co., Ltd.); Anna Kuwana, Haruo Kobayashi (Gunma University)

(2) **Code selective histogram method: Two-tone signal for ADC linearity test time reduction**

Yujie Zhaoi*, Anna Kuwana, Shogo Katayama, Jianglin Wei, Haruo Kobayashi, Takayuki Nakatani, Kazumi Hatayama (Gunma University); Keno Sato, Takashi Ishida, Toshiyuki Okamoto, Tamotsu Ichikawa (ROHM Co., Ltd.)

(3) **Two-step incremental ADC architecture with self-calibration of two reference voltages ratio**

Lengkhang Nengvang*, Shogo Katayama, Jianglin Wei, Lei Sha, Tri Minh Tran (Gunma University); Kazufumi Naganuma, Kiyoshi Sasai, Junichi Saito (Alps Alpine Co., Ltd.); Anna Kuwana, Haruo Kobayashi (Gunma University)

(4) **Segmented DAC unit cell selection algorithm and layout/routing based on Euler's knight tour**

Dan Yao*, Xueyan Bai, Anna Kuwana, Kazuyuki Kawauchi, Masashi Higashino, Haruo Kobayashi (Gunma University); Akira Suzuki, Satoshi Yamada, Tomoyuki Kato, Nobuto Ono, Kazuhiro Miura, Kouji Hirai , Ritsuko Kitakoga (JEDAT Inc.)

(5) **Design of digital-to-analog converter architectures based on polygonal numbers**

Xueyan Bai*, Dan Yao, Yuanyang Du, Minh Tri Tran, Anna Kuwana, Haruo Kobayashi (Gunma University); Kazuyoshi Kubo (National Institute of Technologoy, Oyama College)

(6) **Design consideration on MOS peaking current sources insensitive to supply voltage and temperature**

Takahumi Kamio*, Takashi Hosono, Souma Yamamoto, Jun-ichi Matsuda, Shyougo Katayama, Anna Kuwana (Gunma University); Akira Suzuki, Satoshi Yamada, Tomoyuki Kato, Nobuto Ono, Kazuhiro Miura (JEDAT Inc.); Haruo Kobayashi (Gunma University)

感想

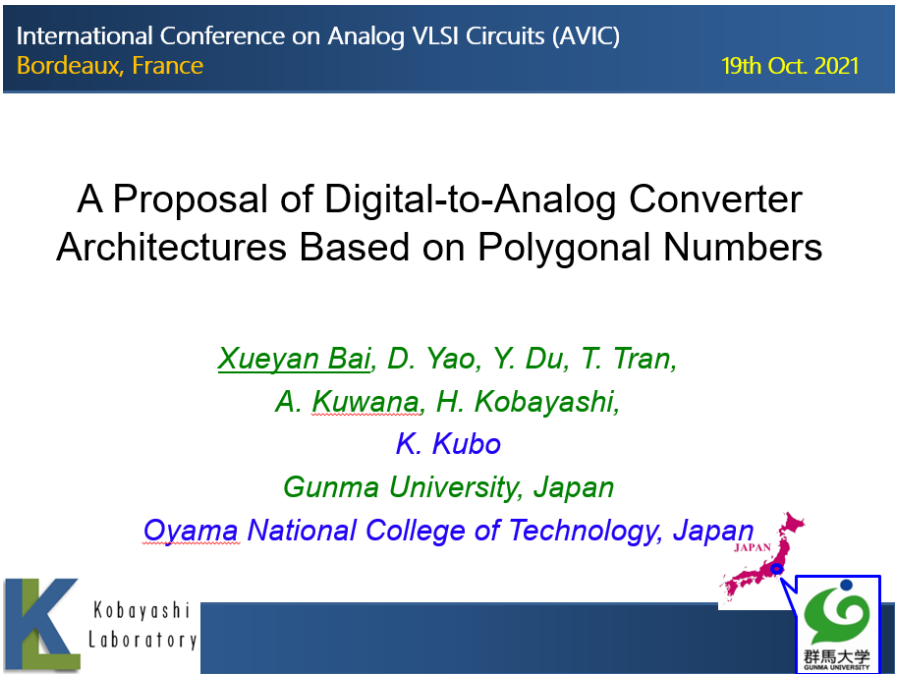
国際学会の発表は今回が初めてではないですが、今回の発表を通じて、英語の資料作成能力が鍛えられただけでなく、発表前の練習では、英語の発音もある程度上がりました。

発表後のコメントの時間に、多くの貴重なアドバイスをいただきました。今後の研究に活かせる良い経験となりました。

他の発表者の研究報告を聞いて、この分野の他の課題についてもっと深く理解できました。

謝辞

この度、AVIC2021 に参加させていただき、今後の研究や、就職活動などに活かせる良い経験となりました。今回国際学会に参加する機会を与えていただいて、ご指導頂いた小林春夫教授、桑名杏奈先生、久保和良先生、その他関係者各位に心から感謝申し上げます。



Fermat Polygonal Number Theorem

Any natural number

↓ expressed by

Sum of N N-angular numbers

Pierre de Fermat
1607 – 1665

k-th of N-angular number, m(N, k) can be expressed by

$$m(N, k) = (1/2)\, k\, [(N-2)k - (N-4)]$$

Then N-angular numbers are given by

1, N, 3N-3, 6N-8, 10N-15, …

for k=1, 2, 3, 4, 5, …

Kobayashi Laboratory

Fermat polygonal number theorem
was finally proven in 1813,
by Augustin-Louis Cauchy.

1789 –1857

ご清聴ありがとうございました

Thank you for listening

謝謝

Merci de votre attention

Tuesday October 19, 2021

Session B1: "Low Noise Amplifier (LNA)" and "Digital-to-Analog Converter (DAC)"