



The 11th International Coding Theory Seminar (11th ICTS)

Philippines (online)
July 17, 2026

Institute of Mathematics
University of the Philippines
Diliman, Quezon City

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Organizing committee

China

Xiwang Cao (Nanjing University of Aeronautics and Astronautics)

Lingfei Jin (vice chair, Fudan University)

Hongwei Liu (chair, Central China Normal University)

Gaojun Luo (Nanjing University of Aeronautics and Astronautics)

India

Manish K. Gupta (chair, Kaushalya: The Skill University)

Sartaj Ul Hasan (Indian Institute of Technology Jammu)

Anuradha Sharma (IIIT-Delhi)

Japan

(TBA)

Korea

Whan-Hyuk Choi (Kangwon National University)

Boran Kim (Kyungpook National University)

Jon-Lark Kim (chair, Sogang University)

Philippines

Rowena Betty (University of the Philippines Diliman)

Romar dela Cruz (University of the Philippines Diliman)

Lucky Galvez (chair, University of the Philippines Diliman)

Singapore

Martianus Frederic Ezerman (chair, Nanyang Technological University)

Thailand

Arunwan Boripan (Ramkhamhaeng University)

Parinyawat Choosuwan (Rajamangala University of Technology Thanyaburi)

Somphong Jitman (chair, Silpakorn University)

Ekkasit Sangwisut (Thaksin University)

International advisors

Nathan Kaplan (University of California, Irvine, USA)

Patrick Sole (Aix-Marseille Universite, France)

Hong-Yeop Song (Yonsei University, Korea)

Chaoping Xing (Shanghai Jiao Tong University, China)

Local organizing committee

Romar dela Cruz (University of the Philippines Diliman)

Lucky Galvez (University of the Philippines Diliman)

Program

All times listed are in Philippine Time (GMT+8).

Date: July 17, 2026

Time (GMT+8)	Activities
1:00 – 1:30 PM	ICTS Committee Discussion
1:45 – 2:00 PM	Opening Jon-Lark Kim <i>Sogang University, South Korea</i>
2:00 – 2:45 PM	Properties of the Ring of Eisenstein Integers and Its Application in Coding Theory Abdul Hadi <i>Universitas Gadjah Mada, Indonesia</i>
2:45 – 3:00 PM	Discussion/Break
3:00 – 3:45 PM	A Comparison of Distance Bounds for Quasi-Twisted Codes John Mark T. Lamos <i>University of the Philippines Los Baños, Philippines</i>
3:45 – 4:00 PM	Discussion/Break
4:00 – 4:45 PM	Quasi self-dual codes over $S_m(\mathbb{F}_2)$ Jupiter Pilongo <i>University of Southern Mindanao, Philippines</i>
4:45–5:00 PM	Discussion/Break
5:00 PM	Closing

Talk 1

Properties of the Ring of Eisenstein Integers and Its Application in Coding Theory



Abdul Hadi

Department of Mathematics
Universitas Gadjah Mada
Indonesia
`abdulhadi1989@mail.ugm.ac.id`

Abstract

This talk presents algebraic properties of prime, even, odd, primitive Eisenstein integers, and the quotient ring of Eisenstein integers. Some results are used as algebraic tools for applications to signal constellations. Next, constructions of signal constellations over quotient rings of Eisenstein integers, equipped with Euclidean and hexagonal distances, generalizing those over Eisenstein integer fields, are discussed. By set partitioning, a quotient ring of Eisenstein integers is divided into equal-sized subsets. In Eisenstein integer fields of prime size, partitioning is not feasible due to structural limitations. In our setup, a quotient ring is partitioned based on additive subgroups in such a way that the minimum distances within each subgroup are larger than in the original set. This technique facilitates multilevel coding and enhances the signal constellation's efficiency.

Talk 2

A Comparison of Distance Bounds for Quasi-Twisted Codes



John Mark T. Lamos

Institute of Mathematical Sciences
University of the Philippines Los Baños
Laguna, Philippines
jtlamos@up.edu.ph

Abstract

In this talk, we present a connection between three “unseemingly related” distance bounds for quasi-twisted (QT) codes, i.e., the Lally bound, the Jensen bound, and the spectral bound. We first extend the first two bounds to QT codes setting then establish a comparison of the three bounds. Moreover, numerical comparisons illustrating how all these three bounds behave over a large number of randomly chosen QT codes will also be presented. Lastly, we provide recent developments on this area of study.

Talk 3

Quasi self-dual codes over $S_m(\mathbb{F}_2)$



Jupiter Pilingo

Department of Mathematics & Statistics
University of Southern Mindanao
Cotabato, Philippines
jgpilongo@up.edu.ph

Abstract

We study a non-unital and non-commutative ring $S_m(R)$, called ring of ordered sum over a ring R . We obtain linear codes over $S_m(\mathbb{F}_2)$, also known as S_m -codes, where $\mathbb{F}_2$ is the binary field. The algebraic structure of S_m -codes, particularly, their residue and torsion codes, will be explored. Moreover, a generalized notion of quasi self-dual codes and even quasi self-dual codes will be introduced. Finally, we give results on the weight enumerators of these codes and construct S_3 -codes in short lengths using the residue and torsion codes.