

# СЕКЦИЯ

## „АЛГЕБРА И ЛОГИКА”

Драги колеги,

На 12 април 2024 г. (петък) от 13:00 часа ще се проведе дистанционно заседание на семинара по Алгебра и логика.

Доклад на тема

### On an Aspect of Second Quantum Revolution

ще изнесе Валентин Илиев (ИМИ-БАН).

Семинарът ще се проведе посредством платформата **Zoom** и всеки желаещ може да се присъедини като последва линка, зададен на страницата на семинара.

От секция „Алгебра и логика” на ИМИ – БАН

<http://www.math.bas.bg/algebra/seminarAiL/>

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#### **Abstract:**

The 2022 Nobel Prize in Physics has been awarded to Alain Aspect, John Clauser, and Anton Zeilinger for their work in Quantum Theory. Mass media called this event part of second quantum revolution which includes mainly quantum computing and other super-technologies. Here we discuss Alain Aspect's version of Einstein-Podolsky-Rosen thought experiment and show that there exists an internal dependence of the simultaneous measurements made by the two pairs of linear polarizers operated in each leg of the apparatus during this experiment. The corresponding Shannon-Kolmogorov information flow (or, noise?) linking a polarizer from one leg to a polarizer from the other leg is proportional to the absolute value of this function of dependence. It turns out that if Bell's inequality is violated, then the experiment performed at one leg is informationally dependent on the experiment at the other leg.