

СЕКЦИЯ

„АЛГЕБРА И ЛОГИКА”

Драги колеги,

На 29 септември 2023 г. (петък) от 13:00 часа ще се проведе дистанционно заседание на семинара по „Алгебра и логика”.

Доклад на тема

Reset Controller Synthesis

ще изнесе

Naijun Zhan (Institute of Software Chinese Academy of Sciences (ISCAS), China).

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/>

Abstract:

Controller synthesis provides a Correct-by-construction mechanism to guarantee the correctness and reliability of hybrid systems (HS) by design. Depending on the types of controls, controllers can be classified into reset controllers, feedback controllers, and switching logic controllers. Reset controllers steer the behaviour of a HS to attain system objective through restricting its initial set and redefining the reset map associated with discrete jumps, which is less explored in the literature, although it is of theoretical and practical significance. In this talk, I will summarize our recent work on the reset controller synthesis for HS. The basic idea is to reduce the problem of guaranteeing safety and liveness properties to differential invariant generation and

generalized reach-avoid problems. For polynomial hybrid systems, those problems can be solved by further reduced to convex optimizations. Moreover, for reality, we discuss this issue in the context of time-delay, as time delay is inevitable in practice. So, we investigate the reset controller synthesis problem for delay hybrid systems (dHS).