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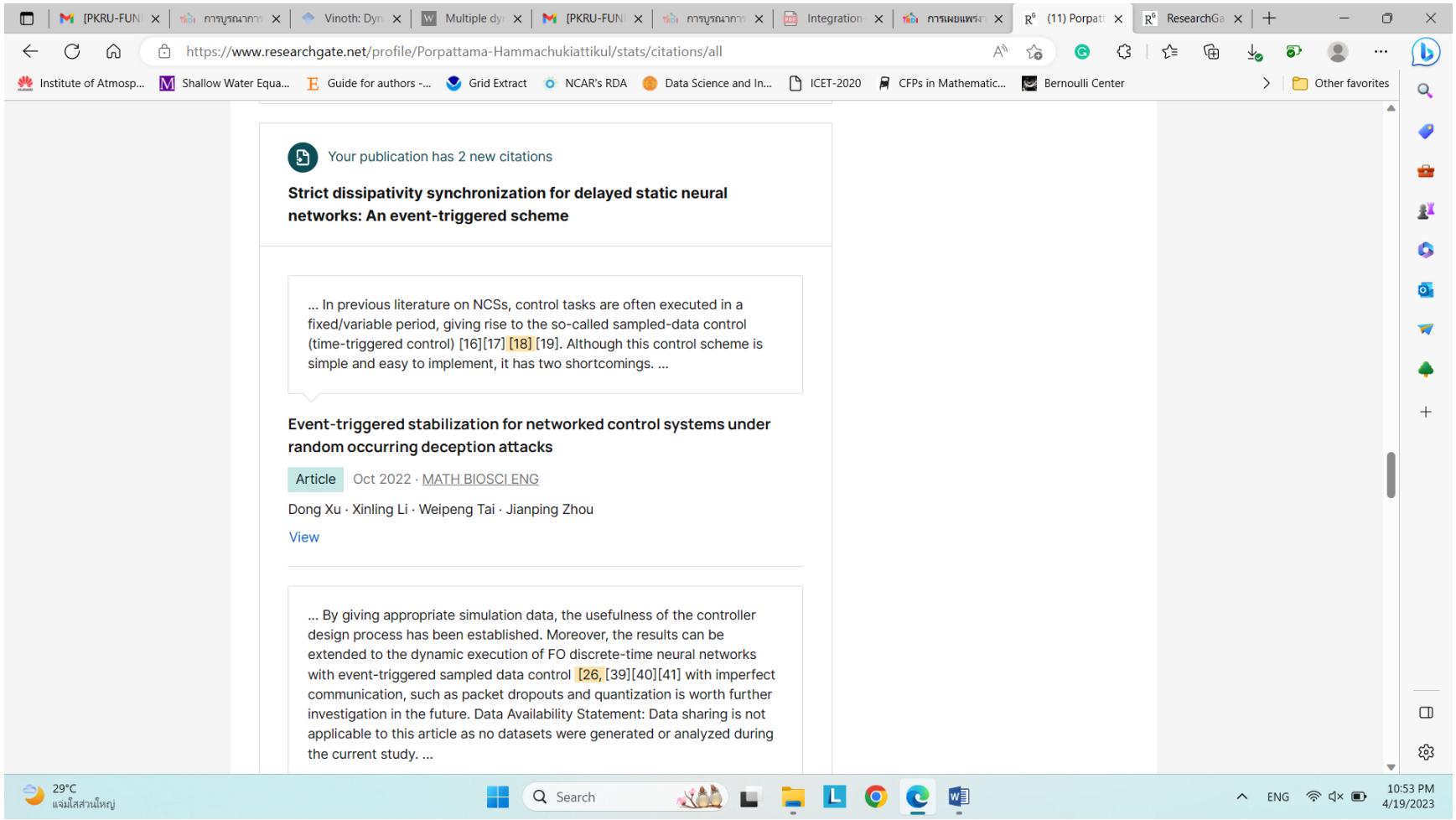

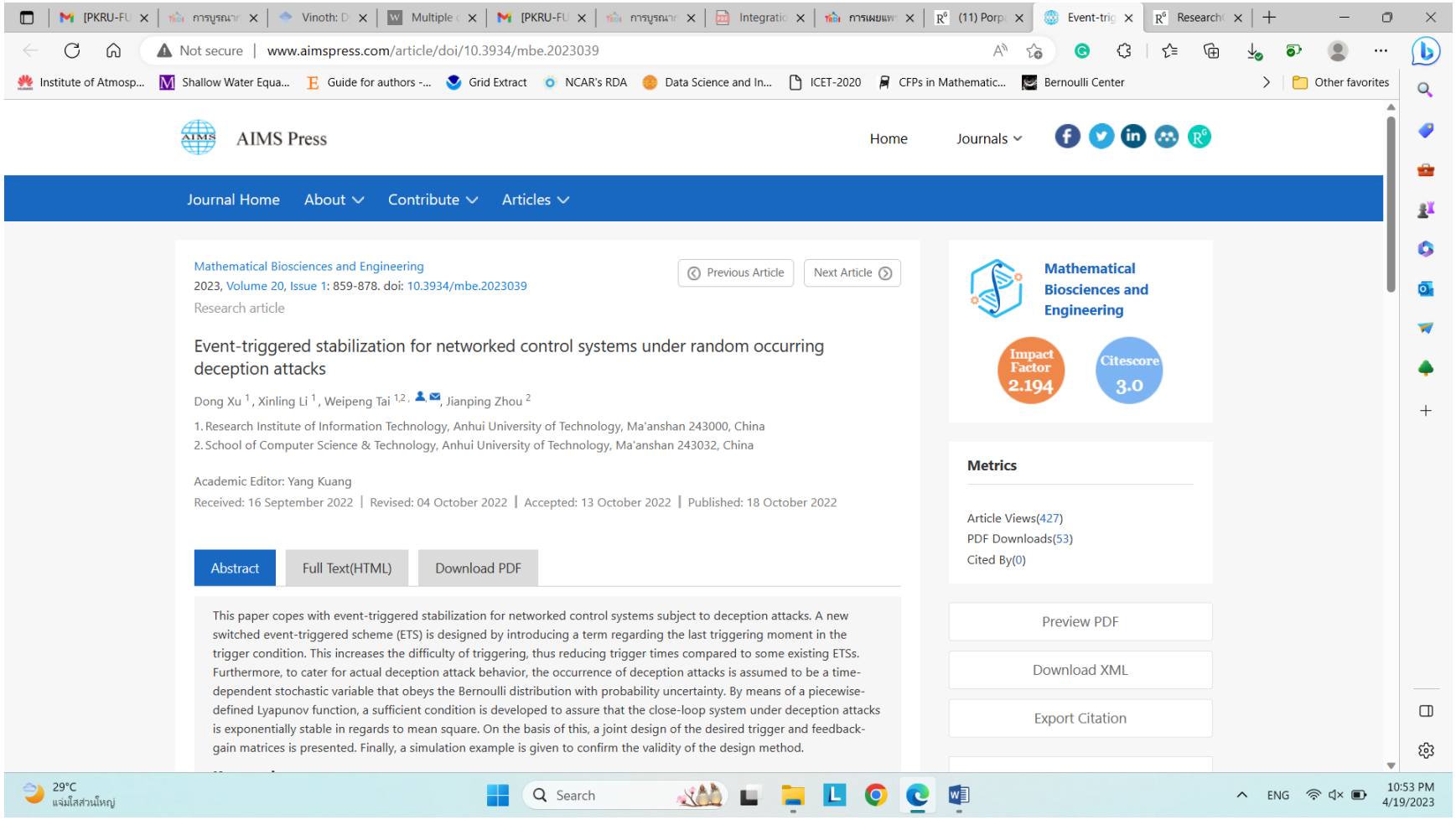

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Event-triggered stabilization for networked control systems under random occurring deception attacks

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This paper copes with event-triggered stabilization for networked control systems subject to deception attacks. A new switched event-triggered scheme (ETS) is designed by introducing a term regarding the last triggering moment in the trigger condition. This increases the difficulty of triggering, thus reducing trigger times compared to some existing ETSs. Furthermore, to cater for actual deception attack behavior, the occurrence of deception attacks is assumed to be a time-dependent stochastic variable that obeys the Bernoulli distribution with probability uncertainty. By means of a piecewise-defined Lyapunov function, a sufficient condition is developed to assure that the close-loop system under deception attacks is exponentially stable in regards to mean square. On the basis of this, a joint design of the desired trigger and feedback-gain matrices is presented. Finally, a simulation example is given to confirm the validity of the design method.

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