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**Sergey Nadtochiy\*** (snadtochiy@iit.edu), Rettaliata Engineering Center, 10 West 32nd Street, Chicago, IL 60616, and **Mykhaylo Shkolnikov**. *Credit network game as a de-centralized network flow problem.*

I will present a de-centralized version of the network flow problem, in which the individual nodes of a network decide strategically on how much connectivity is optimal for each of them. I will show how to construct a Nash equilibrium in this problem by solving a system of linear equations in the max-plus algebra. The specific choice of the optimization objective of the nodes, chosen in this work, corresponds to a model of credit network, where the nodes represent (risk-neutral) firms and the connections represent credit exposures (e.g., lending and borrowing). Remarkably, the resulting equilibrium is very explicit and allows us to compute numerically the equilibrium interest rates and the credit exposures of all participants. Treating the firms as financial institutions, one can also use the proposed model to determine the optimal capital injection strategy in case of a crisis: i.e., for a fixed size of a capital injection, the model allows one to determine which financial institutions should receive it, so that the overall flow of capital to the real economy is maximized. Based on a joint work with M. Shkolnikov. (Received September 14, 2020)