

Special Seminar:

Equation-free analysis of traveling waves in microscopic traffic models

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Abstract:

Who was not yet amazed by traffic jams or stop-and-go waves on highways, emerging without any apparent reason? Just in the US there are 4.5 billion hours of traffic delay per year, which means that these phenomena are worth to be studied. The talk will introduce modern mathematical methods, namely equation-free techniques, to investigate traffic flow and density waves. It will be presented how you can analyze complicated things for which no explicit equations are available like the stability of the free flow of cars or under which situation a traffic jam wave dissolves. This knowledge could help in the future to avoid traffic jams and help all of us to save our valuable time, have less accidents and less pollution.