

## TRANSPORT PROCESSES IN NETWORKS WITH SCATTERING RAMIFICATION NODES

We investigate the streaming of particles with different velocities in a network. In the vertices of the network the particles are scattered, i.e. they change their velocity and then they are distributed to the outgoing edges of the vertices by Kirchhoff rules. This will be formulated as an abstract Cauchy problem

$$\begin{cases} \dot{u}(t) = Au(t), & t \geq 0, \\ u(0) = u_0, \end{cases}$$

for an operator  $(A, D(A))$  on a suitable Banach space  $X$  and then studied by semigroup methods. Particular attention is paid to the asymptotic behaviour of  $A$ .