In this video Sandrine has explained how to compute the **steady state distribution Π** of a **continuous time Markov chain with transition rate matrix Q.**

- The steady state distribution is the solution of

  $$\pi Q = 0$$

  with the normalizing condition

  $$\sum_i \pi_i = 1$$

- The system of linear equations Π Q = 0 can be interpreted as a system of **load balance equations.**
  The load balance equations state that, for each state i, the **average input flow** is equal to the **average output flow** :

$$\sum_{j \neq i} \pi_j q_{ji} = \sum_{j \neq i} \pi_i q_{ij}$$
