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## Quasi stationary distributions and Fleming Viot processes

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A quasi stationary distribution for an absorbing jump Markov process with rates  $Q$  is a probability  $m$  on the non transient states with the property that starting with  $m$  and conditioning on non absorption at time  $t$ , the process at time  $t$  has law  $m$ . The Fleming Viot process is a system of  $N$  particles moving independently with rates  $Q$ , but when a particle is absorbed, it choses one of the other particles with the uniform distribution and jumps instantaneously to its position. This process has been studied for the Brownian motion in a compact domain by Burdzy, Holyst and March. The main feature of the Fleming Viot process is that as  $N$  goes to infinite, the empiric distribution of the invariant measure for the FV process converges to the quasi stationary distribution of the one absorbing Markov chain. The asymptotic independence of two tagged particles is a key element in this proof. We show this independence for Markov chains in countable state spaces and as a consequence the convergence of the profile to the qsd in some cases. Joint work with Nevena Maric, Pablo Groisman and Amine Asselah.