**Numerical Simulation of mobile BEC-impurity interaction** TO-
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sity of Kaiserslautern, Germany — Cooling atoms to temperatures, where quantum
effects become dominant, has become a standard in cold atom experiments. Espe-
cially interactions of quantum baths such as fermi gases and the implementation
of impurities, which form fermi polarons, have been studied theoretically and ex-
perimentally in detail. However, detailed experiments on the bose polaron and the
interaction between impurities and a bose gas are still elusive. We consider a model,
where we immerse a single impurity into a BEC, which is described by Bogoliubov
approximation. From the master equation, we derived the impurity's momentum
resolved scattering and cooling dynamics for numerical simulations. Such cooling
processes should enable momentum resolved radio-frequency spectroscopy of the
BEC polaron.

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