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Velocity-resolved large scale mapping of the ionized and warm neutral gas in OMC 1

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We present a large scale mapping ($\sim 7.5' \times 11.5'$) of OMC 1 taken in the framework of an Open Time Project (P.I. J. Goicoechea) using the *Herschel*/HIFI instrument. Velocity-resolved ($\sim 0.2 \text{ km s}^{-1}$) maps of various tracers of the ionized and warm neutral gas ([C II], CO $J=10-9$ and $J=8-7$, HCN $J=6-5$, HCO⁺ $J=6-5$ and CH⁺ $J=1-0$) offer an unprecedented view of the intricate small-scale kinematics of the ionized/PDR/molecular gas and of the radiative feedback from massive stars. We show that the main contribution ($\sim 85\%$) to [C II] is from dense PDRs at the interface between OMC 1 and the H II blister created by the Trapezium cluster. Around $\sim 15\%$ of the [C II] luminosity arises from gas without CO counterpart. We also study the physico-chemical properties of the gas and analyze the kinematics of the various tracers in the distinct environments probed over the map. In particular, channel maps of the [C II] reveal blue-shifted filamentary structures that likely steam from the neutral cloud. Others can be associated with foreground H I absorption components in the Orion's Veil.