Most of the emission lines we track maintain their shape across the LOC plane, with the range of ionization parameters over which they emit broadening slightly with the removal of dust. Generally, the effects of dust are most prominent with the UV emission lines and some of the shorter wavelength optical emission lines. This observation is consistent with other studies about the effects of dust on the UV emission lines coming from the gas clouds within starburst galaxies (e.g. Heckman et al 1998).

Overall, when comparing the dusty and dust-free simulations, we find the electron temperature across the LOC plane is higher when dust is included. Ionized hydrogen and dust grains contribute equally to the heating of the cloud. However, the dust-free simulations have larger number of coolants making the overall electron temperature decrease. Due to the thermostat effect, this would typically lead to a decrease in metal emission line strengths; however, Si II] λ2335, Mg II λ2798, [Ne V] λ3426, and [Ar IV] λ4740 all show greater emission with the removal of dust (Figure 7a-b). The physical reason for this apparent contradiction is that dust makes a substantial contribution to the overall opacity in our dusty simulations, which decreases the availability of high energy photons to ionize and excite the gas.