Modelling the Diffuse Ultraviolet Emission around Orion

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We have studied the diffuse Ultraviolet (UV) radiation near M42 using All-Sky Imaging Surveys (AIS) of Galaxy Evolution Explorer (GALEX) in the Far-UV and Near-UV. The main source of this diffuse emission is the scattering of starlight from the Trapezium stars by dust in front of the nebula. The dust grains are known to be anomalous in Orion with $R_V = 5.5$. We compare the UV diffuse emission with the Mid-Infrared (MIR) and Far-Infrared (FIR) diffuse emission observed by the Hershel Space Observatory and the Akari satellite for the same locations. The intensity ratios in the different MIR and FIR bands for each of the locations enable us to determine the type of dust contributing to the diffuse emission as well as to derive a more accurate 3D distribution of stars and dust in the region. We have used these results to model the NUV and FUV scattering around Orion and to test the validity of existing models.