OMEGA and HRSC onboard Mars Express have observed the CO2 ice clouds above the equator in northern spring and summer, while THEMIS onboard Mars Odyssey observed the clouds in northern midlatitudes during autumn and winter, above the height of ~45 km on Mars. The observed CO2 ice clouds are used for the detection of wind speed in the mesosphere by tracking the clouds. We introduced a CO2 ice cloud formation scheme, which makes the clouds if the forecasted temperature is lower than the CO2 condensation level, into our Mars General Circulation Model (DRAMATIC MGCM). In the preliminary simulations with the scheme, the cloud formations were seen in consistent season, latitude and altitude with the observations. In the presentation we will also show the numerical results of Martian mesospheric wind fields in comparison with the detections from the CO2 ice cloud tracking.