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CASA task [simobserve](#) is capable of adding thermal and/or phase noise to simulated observations of a known intensity distribution, provided that one has an estimate of the average precipitable water vapour (user_pwv).

To choose an appropriate value of the pwv for a given observing frequency, it is recommended that one use the sensitivity calculator within the Observing Tool. First launch the Observing Tool, then click on the "Tool" menu and choose "Sensitivity Calculator". Enter the desired observing frequency, and for "Water Vapour Column Density" select "Automatic choice". This will give you a reasonable pwv and tau/Tsky for the frequency you have chosen. You can change the "Water Vapour Column Density" selection to other values of pwv (in units of millimeters of water vapour) by selecting "Manual choice".

To see more about typical weather and observing conditions, see Section "Proposal planning" of the [ALMA Proposer's Guide](#) and the [ALMA Technical Handbook](#), especially Chapter "Receivers".

CASAGuides are available here:

https://casaguides.nrao.edu/index.php?title=Simulating_Observations_in_CASA_5.4