DEUTERATED METHANOL IN LOW-MASS PROTOSTARS

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In the last five years, deuterated species have been observed to be very abundant in low-mass protostars envelopes. Recent laboratory studies of deuterated isotopomers of methanol provided astronomers with the frequencies and line strengths, allowing us to observe these species in astronomical sources. Doubly-deuterated methanol was first detected towards the low-mass protostar IRAS16293-2422, with a fractionation CHD_2OH/CH_3OH of 0.2. Subsequent observations showed that methanol is similarly deuterated in other low-mass protostars. These observations bring a very constraining tool to understand the processes leading to molecular deuteration in protostellar envelopes. Ongoing observations of other deuterated isotopomers of methanol will also be discussed in this talk.