

RMSE of flux (W m^{-2})

- use the variable VMR table (81 IPs, 21 bands)
- use the fixed VMR table (121 IPs, 25 bands)

LBL $\Delta k = 0.01 \text{ cm}^{-1}$ shift

LBL $\Delta k = 0.2$ & 2 cm^{-1}

k-d 1312 IPs (82 bands)
w/o interpolation

k-d optimized table
w/o interpolation

k-d optimized table
w/ interpolation

The graph plots the Root Mean Square Error (RMSE) of flux in W m^{-2} against five different modeling configurations. Two data series are shown: one using a variable VMR table (purple line with '+' markers) and another using a fixed VMR table (teal line with 'x' markers). The x-axis categories, from left to right, are: LBL with a 0.01 cm^{-1} shift, LBL with 0.2 and 2 cm^{-1} shifts, k-d with 1312 IPs and 82 bands without interpolation, k-d with an optimized table without interpolation, and k-d with an optimized table with interpolation. The y-axis ranges from 0 to 0.7. The RMSE generally increases from left to right. The fixed VMR table (teal) shows a sharp increase in RMSE for the k-d optimized table with interpolation case, reaching approximately 0.62 W m^{-2} , while the variable VMR table (purple) reaches approximately 0.45 W m^{-2} for the same case.

Configuration	Variable VMR Table (81 IPs, 21 bands)	Fixed VMR Table (121 IPs, 25 bands)
LBL $\Delta k = 0.01 \text{ cm}^{-1}$ shift	0.01	0.01
LBL $\Delta k = 0.2$ & 2 cm^{-1}	0.11	0.11
k-d 1312 IPs (82 bands) w/o interpolation	0.19	0.19
k-d optimized table w/o interpolation	0.35	0.32
k-d optimized table w/ interpolation	0.45	0.62