	Shankar's (lindblad)	Mine (denmat_dynm_v4.4)
Output files	Energy-resolved density and spin in dist.? Imε in imEps.?	Total or energy-resolved observables of electrons or holes in $(OB)_elec(hole)_tot(ene).out. OB can be fn, Sx, Sy, Sz. If pump and probe are active, write Imε in ./probe_results/imEps.$(it).dat
Interface	lindbladInit	lindbladInit_for-DMD-4.4 or Internal MoS2 model
Band ranges	Two – one for probe ; one for pump and e-ph for both conduction and valance bands	Three – for probe ; for pump ; for e-ph. For e-ph, you may consider only conduction or valence bands (useful for GaAs)
Electron-phonon dynamics	Lindblad equation	Both Lindblad and conventional equations $\frac{\partial \rho_{12}^{k}}{\partial t} = \frac{\pi}{\hbar N_{k'}} \sum_{345}^{k'} \left[\begin{array}{c} (I-\rho)_{13}^{k} \mathcal{P}_{3245}^{I,kk'}(t) \rho_{45}^{k'} \\ -(I-\rho)_{34}^{k} \mathcal{P}_{3415}^{II,kk'}(t) \rho_{42}^{k'} \end{array} \right] + H.C.,$ $\mathcal{P}_{1234}^{I}(t) = P_{1234} \exp\left[i\left(\epsilon_1 - \epsilon_2 - \epsilon_3 + \epsilon_4\right)t\right],$ $\mathcal{P}_{1234}^{II}(t) = P_{1234} \exp\left[i\left(-\epsilon_1 + \epsilon_2 + \epsilon_3 - \epsilon_4\right)t\right]$ For Lindblad, $P_{1234}^{I} = \sum_{\pm\lambda} G_{13}^{\pm} G_{24}^{\pm,*} n^{\pm}$ $P_{1234}^{II} = \sum_{\pm\lambda} G_{31}^{\pm} G_{42}^{\pm,*} n^{\mp}$ For conventional, $P_{1234}^{I} = \sum_{\pm\lambda} g_{13}^{\pm} \mathcal{G}_{24}^{\pm,*} n^{\pm}$ $P_{1234}^{II} = \sum_{\pm\lambda} g_{31}^{\pm} \mathcal{G}_{42}^{\pm,*} n^{\mp}$ $\mathcal{G} = g\delta$ of a kpair (k,k'). "n" is phonon occupation. Notice that as P? includes "n", temperature must be the same as that in initialization. The input P? matrices data are stored in dense form. Optionally, by setting alg_sparseP=1, the code can convert them to sparse ones. In any case, you can search "ns_tot" in output to see how many elements of P? matrices are larger than several thresholds (default 1e-40).
Pump dynamics	Instantaneous perturbation;	Instantaneous perturbation; Lindblad dynamics;

	Lindblad dynamics	Coherent dynamics (following Shankar's report dmDynamics.pdf)
Other scatterings		1. A phenomenon relaxation \dot{rho} = - (rho - rho_eq) / tau_phenom for selected bands 2. Electron-impurity scattering 3. Electron-electron scattering
Time		See "3. Time and measure" in README_input.txt