**Figure 2.** Three different descriptions of two process coupling schemes for the three-process problem defined in Sect. 3. The scheme depicted in the left column corresponds to the original scheme used in EAMv1 for the coupling of aerosol emissions, dry removal, and the parameterization of turbulent transport and aerosol activation-resuspension. The scheme depicted in the right column corresponds to the revised scheme proposed and evaluated in the companion paper (Part I). We note that these descriptions are simplified versions of the coupling implemented in EAMv1. Here, we focus only on the three strongest sources and sinks of the global mean dust budget presented in Sect. 3 of the companion paper, while the many other processes in EAMv1 (see Fig. 1 in the companion paper) are omitted.