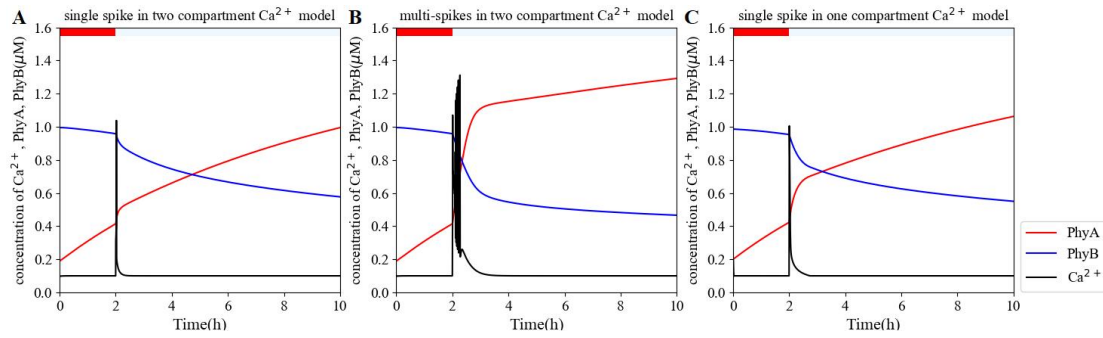




Supplementary Figure 3. Ca²⁺ signaling modes differentially shape phytochrome A/B homeostasis.

(A) Dual- compartment Ca²⁺ model under single- pulse induction. A single Ca²⁺ pulse induces gradual phyA accumulation (red curve) toward a high steady- state level, while phyB (blue curve) declines rapidly and stabilizes at a low level, establishing a "high phyA / low phyB" equilibrium. (B) Dual- compartment Ca²⁺ model under multi- pulse induction. Repetitive Ca²⁺ pulses trigger pronounced phyA and phyB fluctuations. phyA rises transiently before declining to a stable plateau, whereas phyB shows a brief increase followed by sustained decrease, indicating accelerated pigment- homeostasis establishment under oscillatory signaling. (C) Single- compartment Ca²⁺ model under single- pulse induction. Although phyA and phyB trends resemble those in the dual- compartment model, phyA accumulation is slower and phyB decline less pronounced, demonstrating that Ca²⁺ compartmentalization enhances the amplitude and kinetics of phytochrome responses.