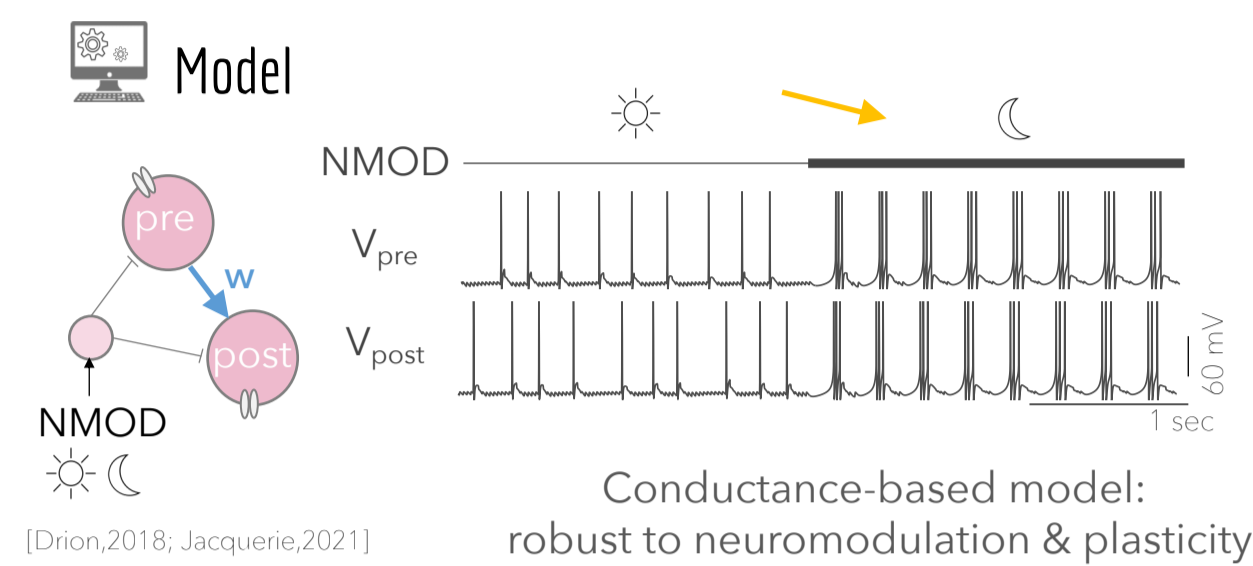
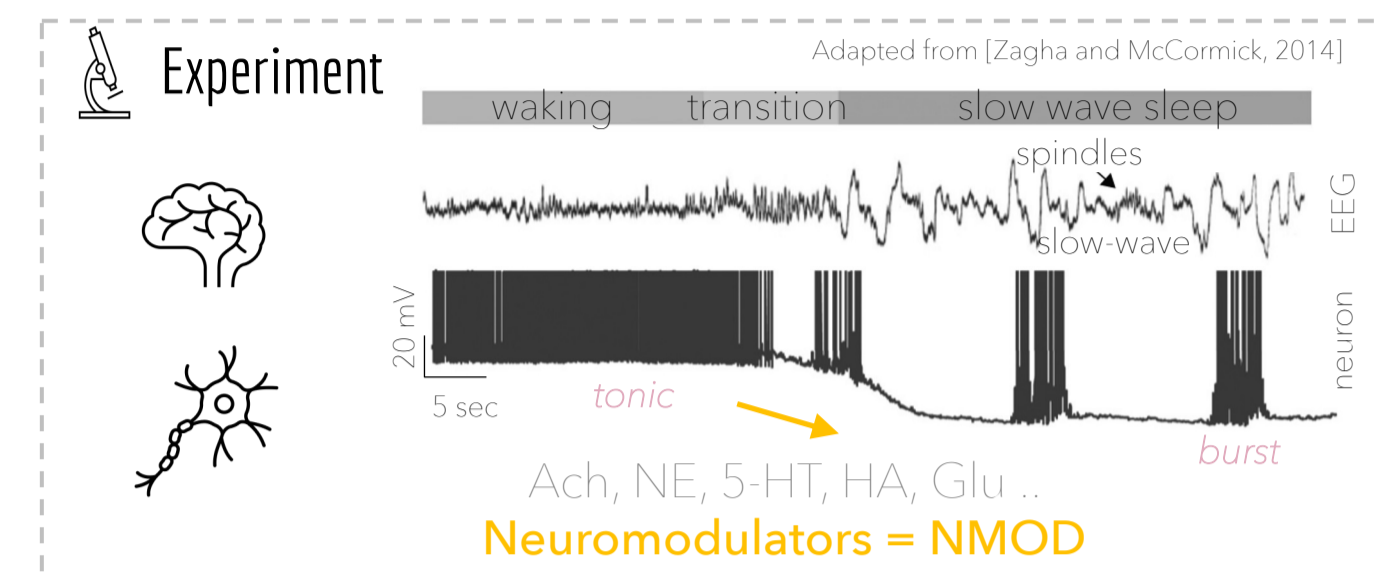
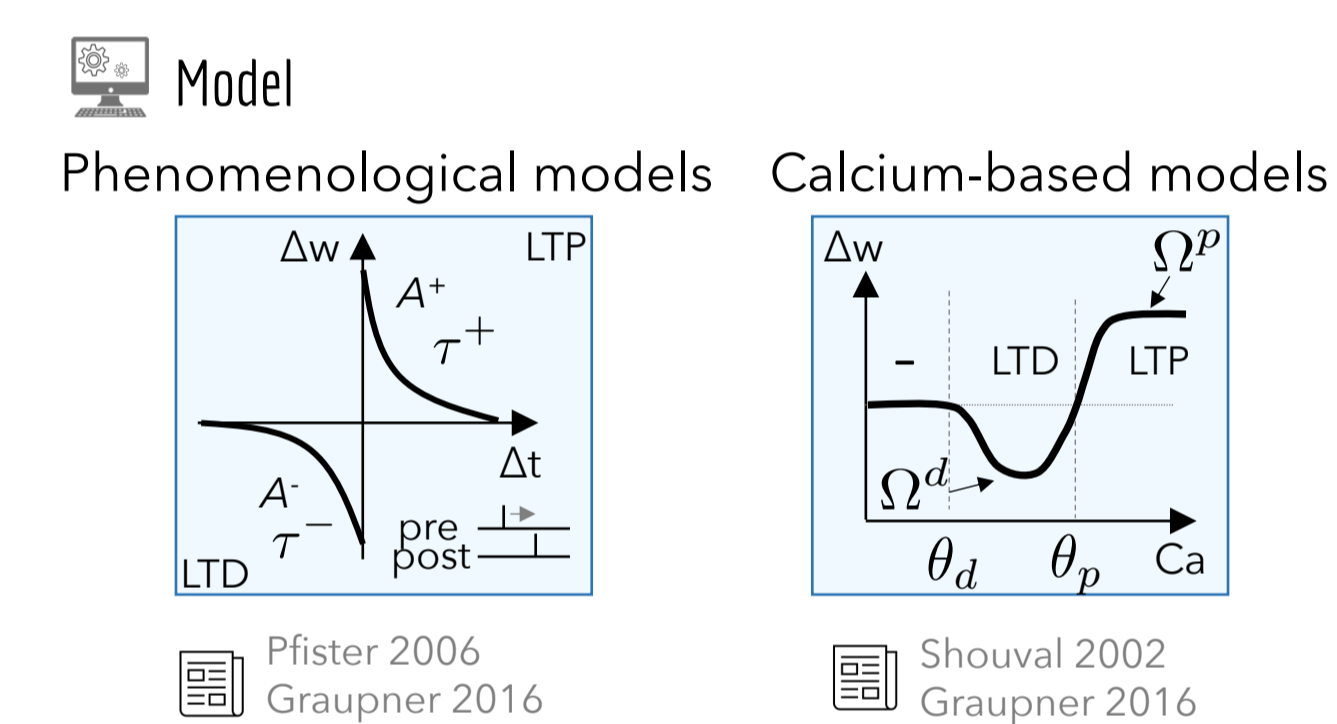
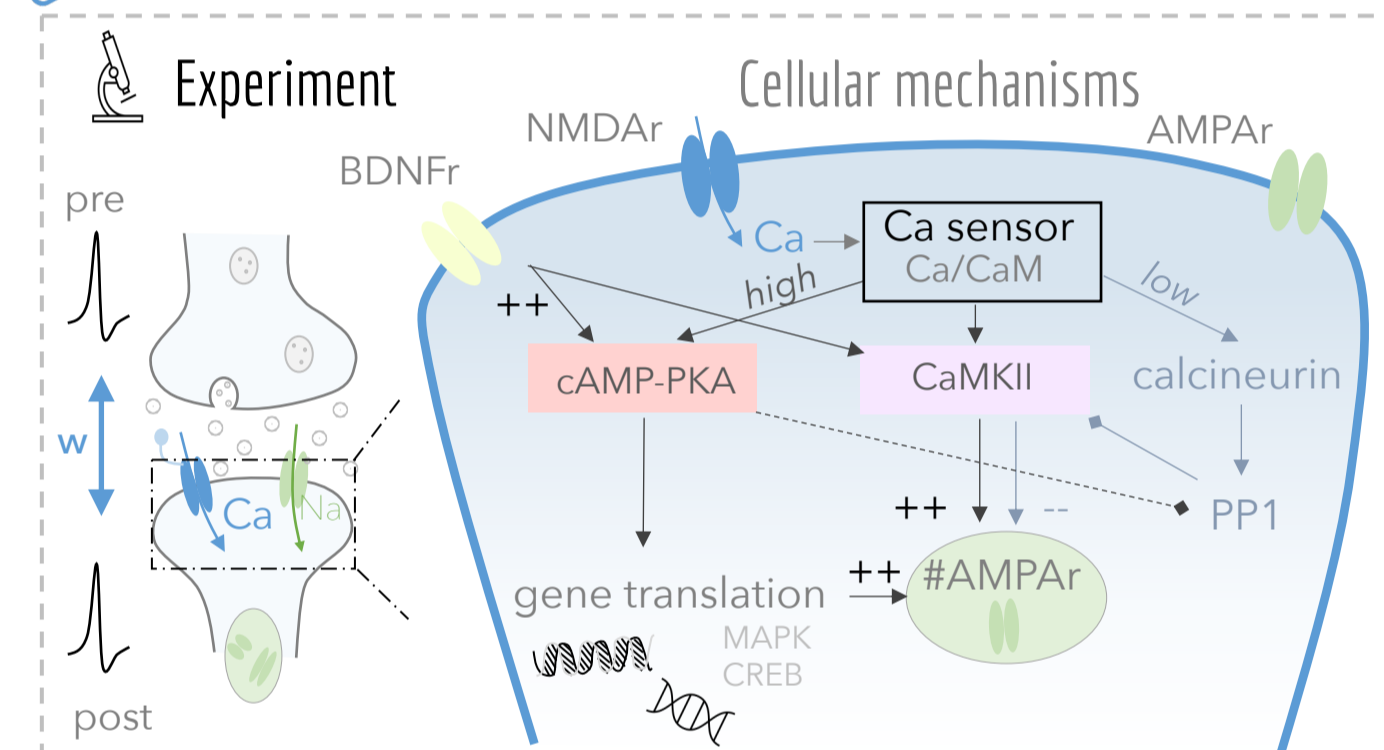


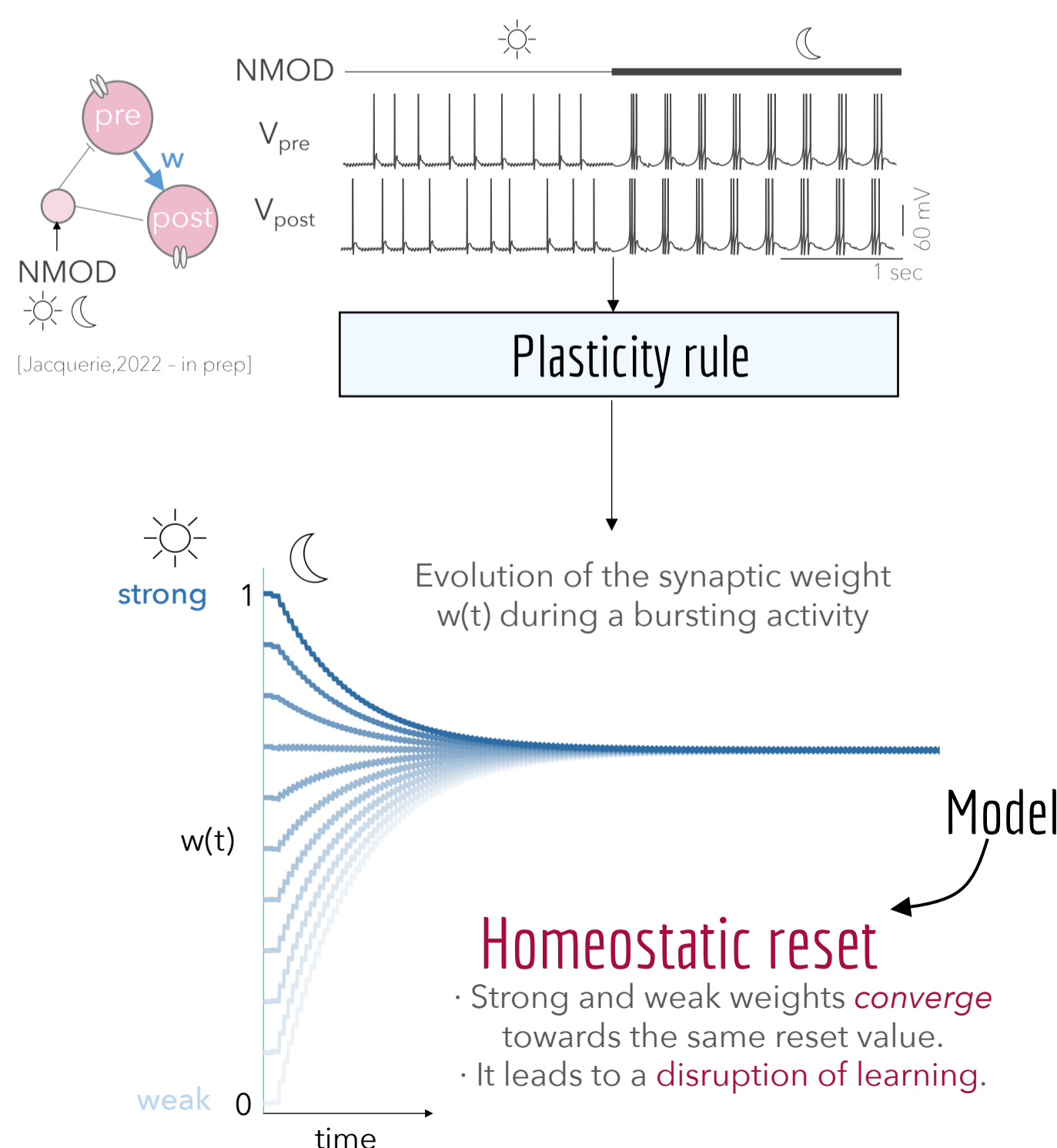
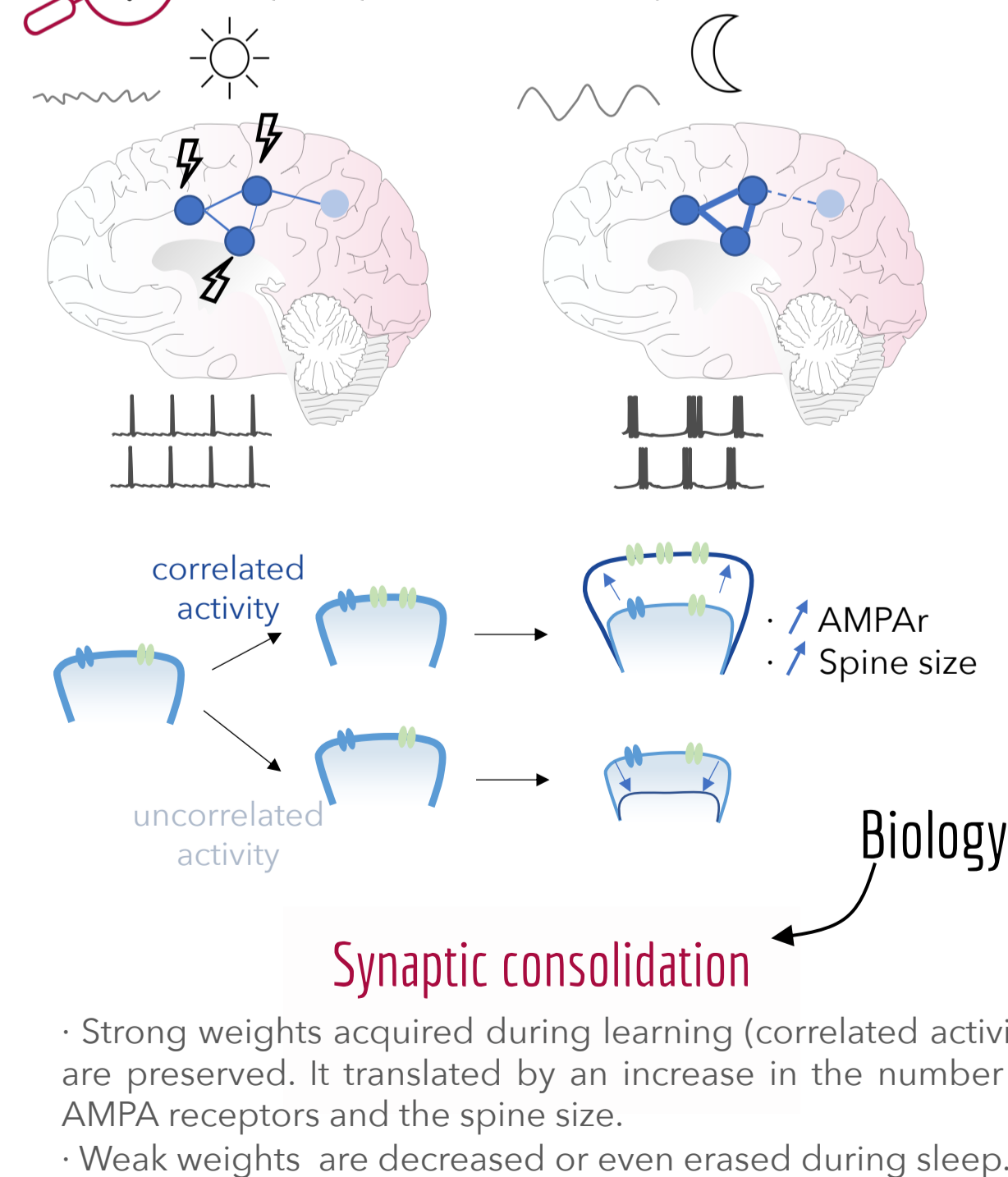
## Network rhythms during sleep and wakefulness



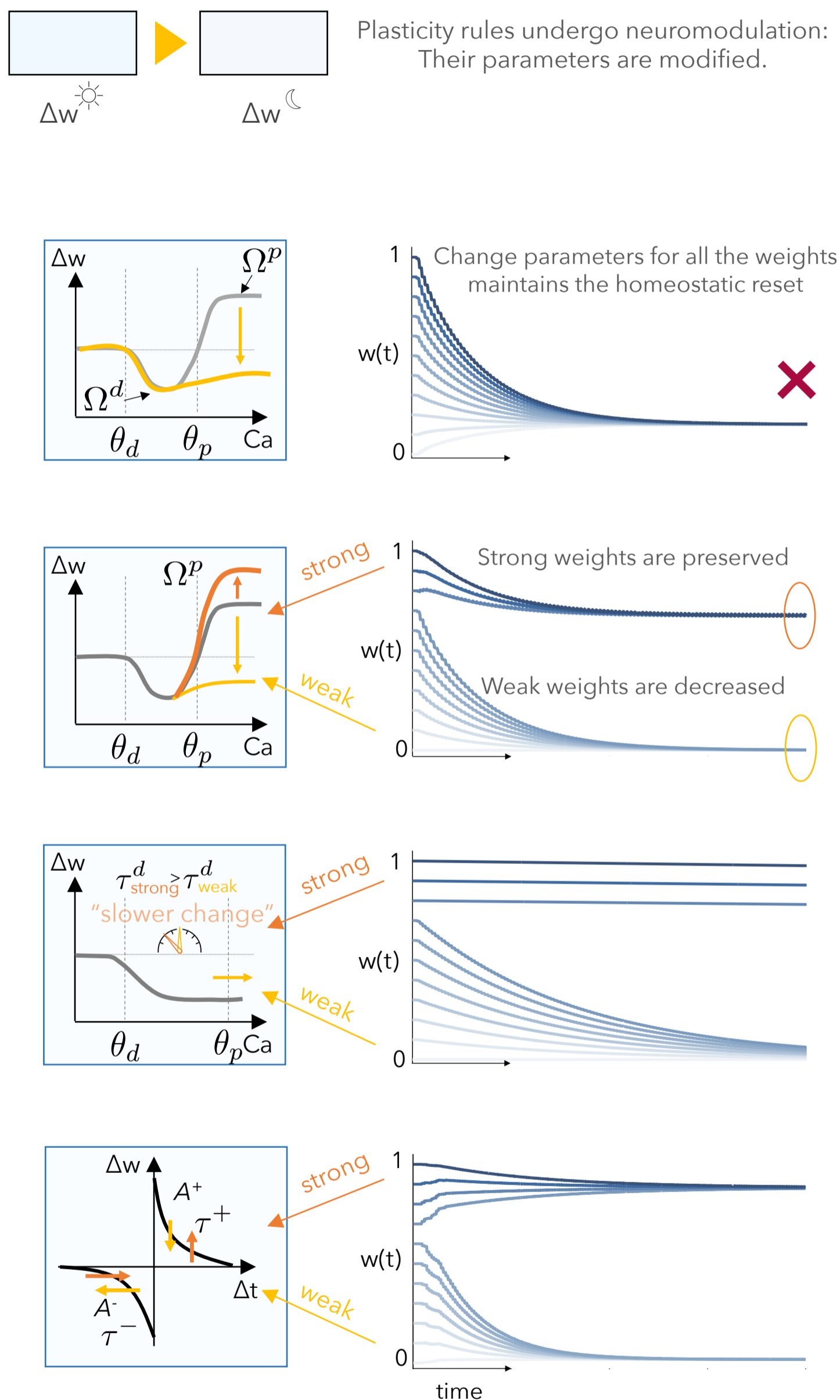
## Synaptic plasticity



## Sleep-dependent memory consolidation



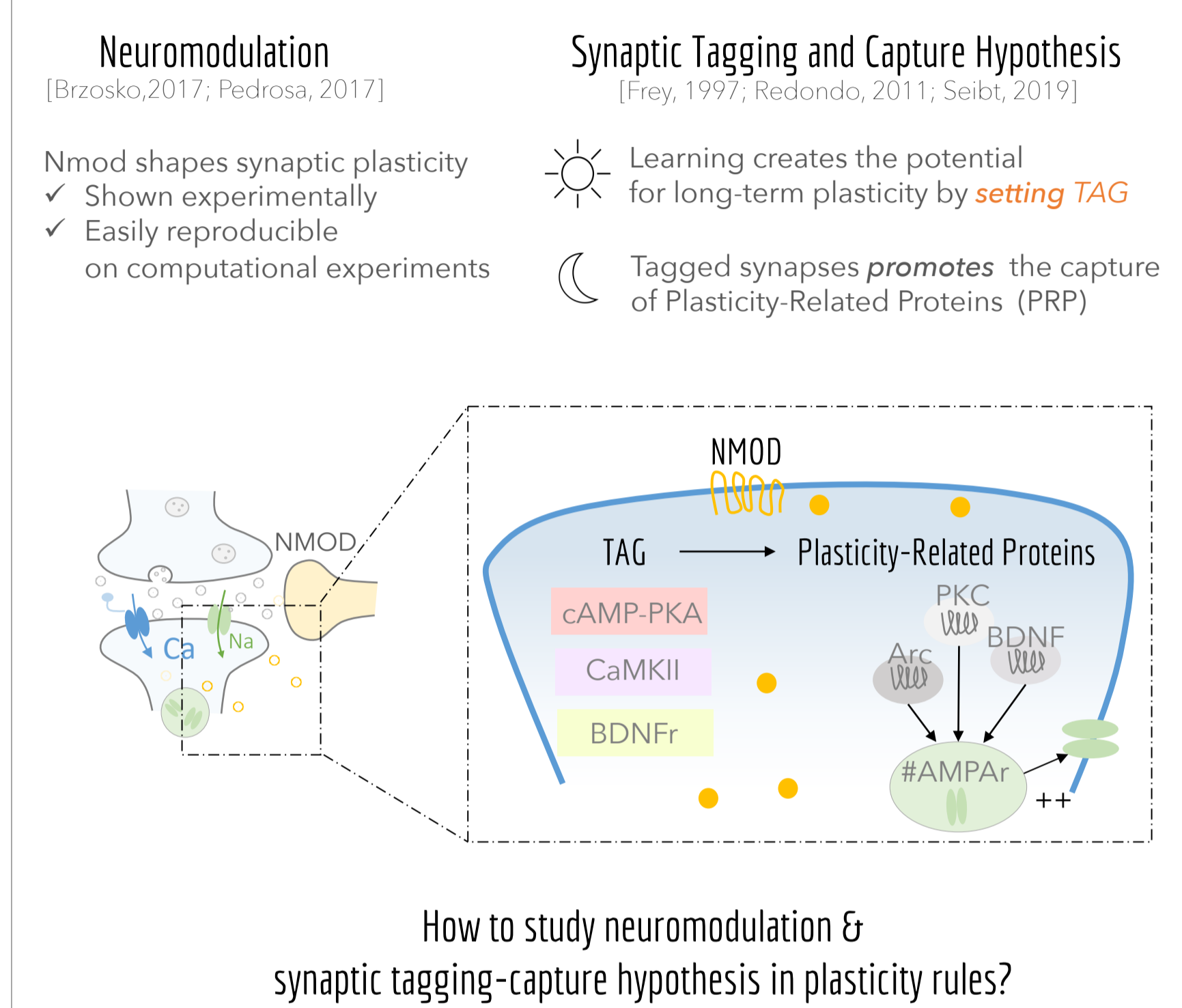
## Neuromodulation of synaptic plasticity rules



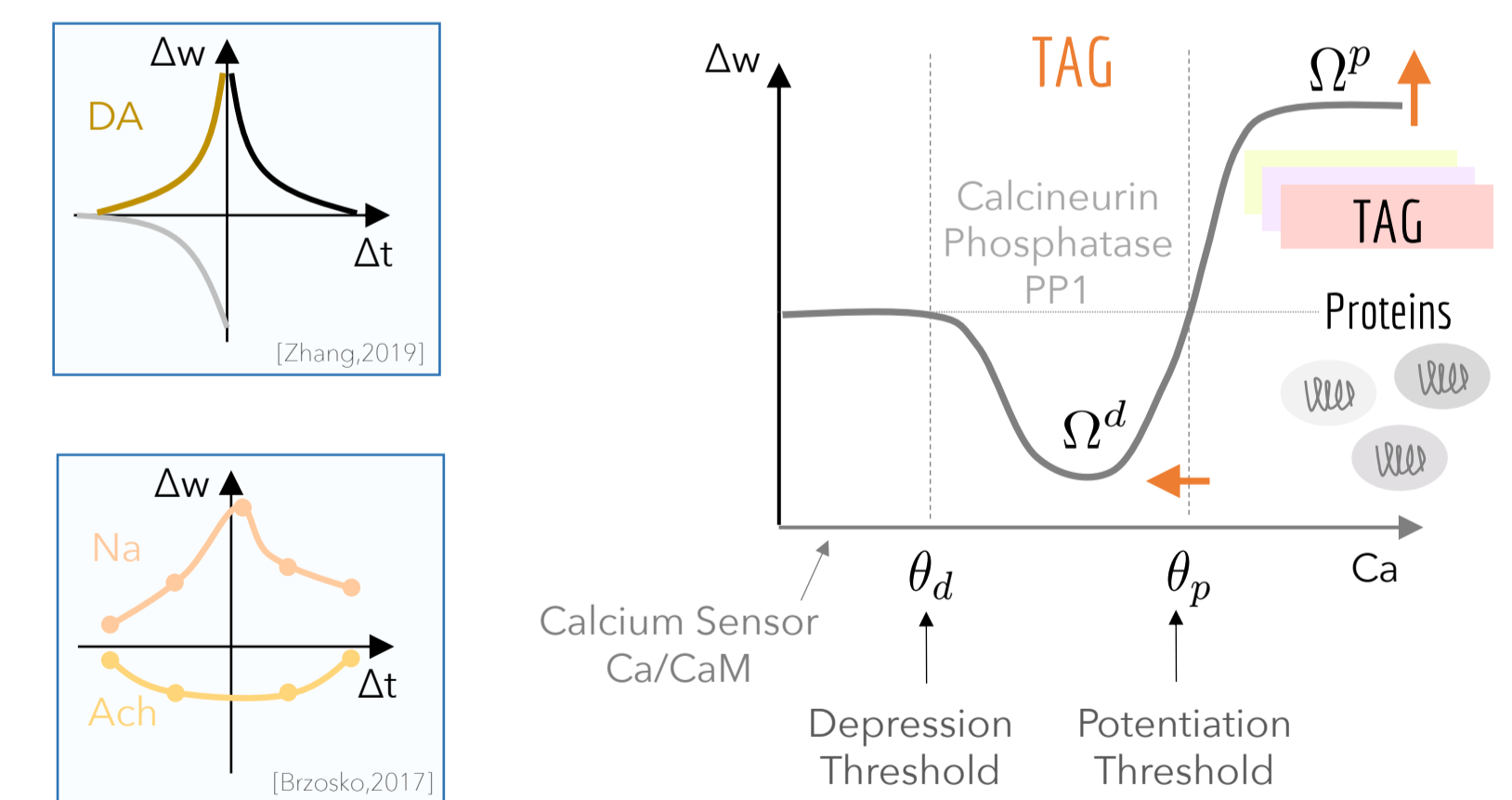
### Conclusion

- Neuromodulation alters synaptic plasticity rules between wake state and sleep state. The rules are **state-dependent**.
- The rules need to be **tag-dependent**. Potentiation or depression levels are modified as well as the time-constants in accordance with the weight acquired during the learning phase.

## Biological tools to exploit the homeostatic reset



## How to study neuromodulation & synaptic tagging-capture hypothesis in plasticity rules?



### Conclusion

Modification of synaptic rules unravels and suggests potential mechanisms for sleep-dependent memory consolidation. This work tends to bridge computational experiments to biological mechanisms and vice-versa.

- Glossary
- CaMKII: ca/calmodulin dep- prot- kinase II
  - cAMP: cyclic adenosine monophosphate
  - PKA/C: protein kinase A/C
  - Arc: Activity-regulated cytoskeletal
  - BDNF: receptor for BDNF (TrkB)
  - BDNF: brain-derived neurotrophic factor
  - MAPK: mitogen-activated protein kinase
  - CREB: cAMP Response Element-Binding Protein