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## Semi-empirical modeling of low-dimensional metal-halide perovskites

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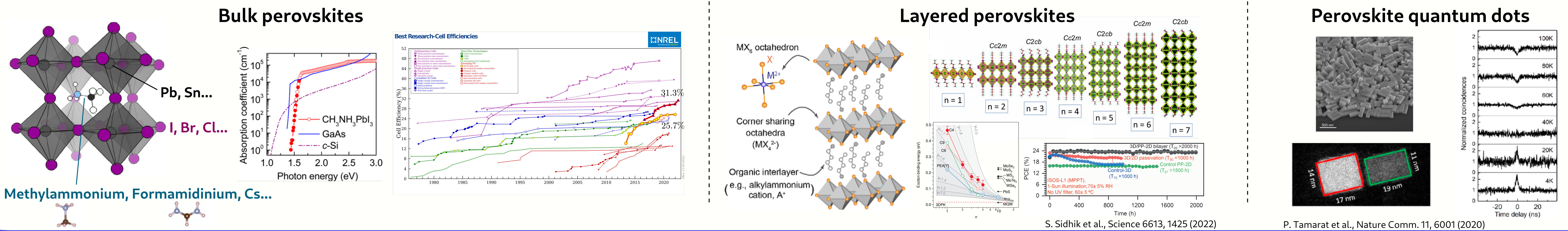
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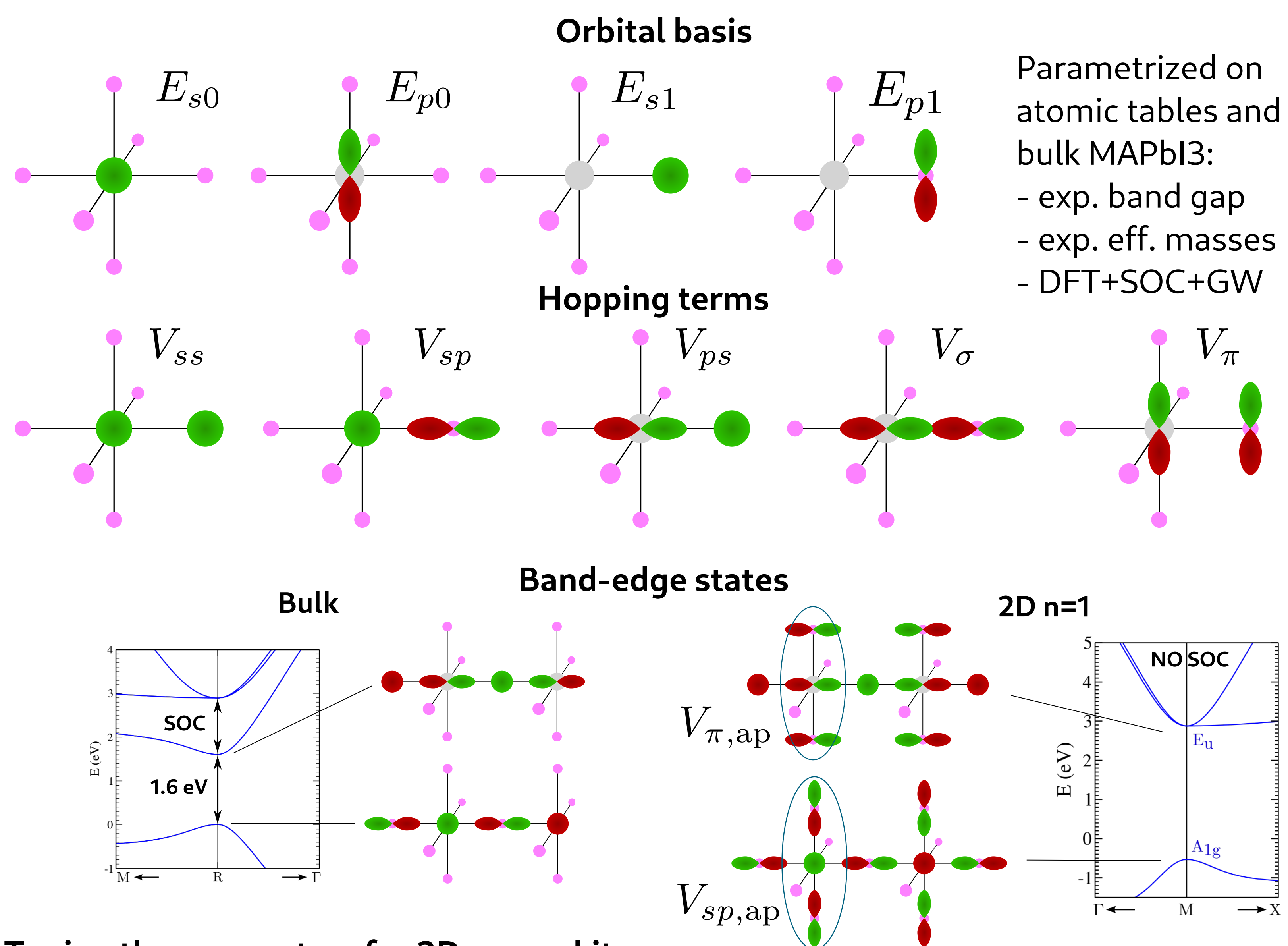
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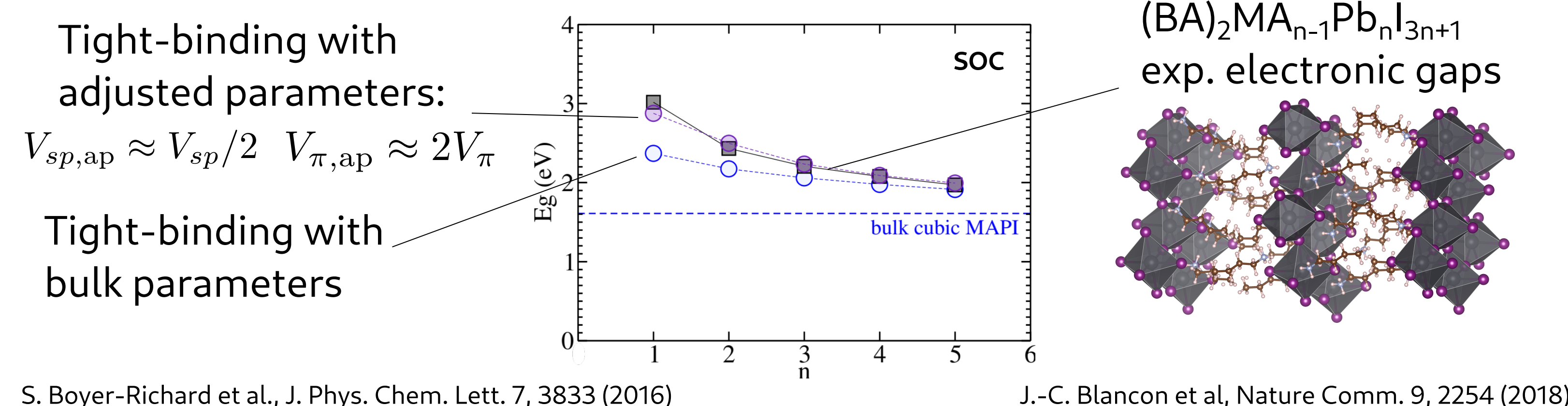
## Metal-halide perovskites as optoelectronic materials



## Tight-binding modeling of perovskites



### Tuning the parameters for 2D perovskites



## Multiexcitons in perovskite quantum dots

