

## **Image Potential State from van der Waals Density Functional**

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### Abstract:

The van der Waals density functional [1] by Langreth and Lundqvist is a density functional, which can describe both covalent and van der Waals bondings in a seamless fashion, and thanks to the recent developments, it has become accurate in describing a wide range of materials, including surfaces and interfaces [2]. In this talk, after a brief introduction to the van der Waals density functional and its variant [3], I show that the image potential state, which is known to be inaccurately described with semilocal approximation, can be described well with the van der Waals density functional [4]. I also discuss the peculiar hybrid image potential states formed at an organic/graphene interface [5], which can explain the observed scanning tunneling microscopy image.

### References

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