

Effect of external contacts on edge magnetic moments in graphene nanoribbons

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A problem of carbon-based structures' magnetism is not free from controversies and still open to debate. Theoretically, it is well known that magnetic moments can be formed at carbon atoms with unsaturated bonds. In graphene nanostructures, typically this situation corresponds either to the zigzag-type fragments of the outer edges or the inner boundaries close to vacancies or holes. In this contribution the former case is studied within the framework of tight-binding method (for π -state electrons) and the Green function technique. The main problem of interest here is the influence of external electrodes on the edge magnetic moments. It is shown that the edge moments get reduced (and eventually disappear) when the graphene nanoribbon/electrode interface becomes more and more transparent for electrons.