

# PUBLICATION LIST

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## Peer reviewed:

- S. Ortega Castillo and M. A. Prieto Yerro, *The polynomial cluster value problem*, to appear in Journal of Mathematical Analysis and Applications.  
Available online at <https://arxiv.org/abs/1702.06471>
- W. B. Johnson and S. Ortega Castillo, *The cluster value problem in spaces of continuous functions*, Proc. Amer. Math. Soc. 143 (2015), 1559-1568.  
Available online at <http://www.ams.org/journals/proc/2015-143-04/S0002-9939-2014-12190-3/S0002-9939-2014-12190-3.pdf>  
Also available at <http://arxiv.org/abs/1211.2339>
- W. B. Johnson and S. Ortega Castillo, *The cluster value problem for Banach spaces*, Illinois J. Math. 58 (2014), 405-412.  
Available online at <http://projecteuclid.org/euclid.ijm/1436275491>  
Also available at <http://arxiv.org/abs/1307.2195>
- Yu. N. Gartstein, T. D. Bustamante and S. Ortega Castillo. *Polarons and excitons on a cylinder: A simplified model for nanotubes in polar environments* J. Phys.: Condens. Matter 19 156210 (12pp).  
Available online at <http://iopscience.iop.org/article/10.1088/0953-8984/19/15/156210/meta>  
Also available at <http://arxiv.org/pdf/cond-mat/0610722.pdf>

## Conference proceedings:

- S. Ortega Castillo, *Cluster value problem in infinite-dimensional spaces*, Contemporary Mathematics 657 (2016), 165-178.  
Available online at <http://bookstore.ams.org/conm-657/>

## In progress:

- S. Ortega Castillo, *Strong pseudoconvexity in Banach spaces*, arXiv preprints.

## Theses:

- S. Ortega Castillo, **Cluster value problems in infinite-dimensional spaces**. Thesis (Ph. D.)-Texas A&M University, 2014. 68 pp. ISBN: 978-1321-58823-1, ProQuest LLC, MR3337659.

Available online at <http://oaktrust.library.tamu.edu/handle/1969.1/153655>

### *Summary:*

In this dissertation we study cluster value problems for unital Banach algebras  $H(B)$  of analytic functions on the open unit ball  $B$  of a Banach space  $X$ , containing  $X^*$ . For example, we have got a cluster value theorem for  $H^\infty(B_{C(\alpha)})$  for  $\alpha$  a recursive ordinal, by using a lemma based on a  $\bar{\partial}$  solution. We also used Möbius biholomorphisms to translate fibers and cluster sets for a polynomial cluster value problem on any  $H^\infty(B_{C(K)})$ .

We also prove that for any separable Banach space  $Y$ , a cluster value problem for  $H(B_Y)$  ( $H = H^\infty$  or  $H = A_u$ ) can be reduced to a cluster value problem for  $H(B_X)$  for some Banach space  $X$  that is an  $\ell_1$ -sum of a sequence of finite-dimensional spaces.

We conclude this work by describing the related  $\bar{\partial}$  problem and defining strong pseudoconvexity as well as uniform strong pseudoconvexity in the context of Banach spaces.