Universal Confining Strings: From Compact QED to the Hadron Spectrum

Maria Diamantini[1], Fernando Quevedo[2,3], Carlo Trugenberger[2,4], and Luis Zapata*†[2]

[1]NiPS Laboratory, INFN and Dipartimento di Fisica e Geologia, University of Perugia – via A. Pascoli, I-06100 Perugia, Italy

[2]New York University Abu Dhabi – PO Box 129188, Abu Dhabi, United Arab Emirates, United Arab Emirates

[3]Department of Applied Mathematics and Theoretical Physics [Cambridge] (DAMTP) – DAMTP, Centre for Mathematical Sciences, Wilberforce Road, Cambridge CB3 0WA, United Kingdom

[4]SwissScientific Technologies SA – rue du Rhone 59, CH-1204 Geneva, Switzerland

Abstract

We investigate the description of quark confinement in terms of confining strings or flux tubes. We show that compact QED with a topological θ−*term*, *inthedyoncondensationphase*, *isdescribedbya*{*ma*
formfield$B_{\mu\nu}$*thatgivesrisetoastringtheorywithanIRBrazovskii*−*Lifshitzfixedpointatstrongcoupling*. *Thiscorrespo*
1)*dimensions*, *representingthedualofasymptoticfreedomintheUV* . *Contrarytocriticalstrings*, *whichcorrespondtotrivial*
sheetresonance, *inadditiontotheNambu*−*Gotophonons*, *thatimprovesfittingwithdata*. *Wecomputetheconfiningpotentia*
$aL\sqrt{\{1-c/L2\}}$*withrunningparameters*$a(L)$, $c(L)$. *Wecomputethemassdifferenceratiosfortheheaviestquarkoniuma*

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*Speaker

†Corresponding author: lfz2012@nyu.edu