Accepted Manuscript

Holography inspired stringy hadrons

Jacob Sonnenschein

PII: S0146-6410(16)30024-2

DOI: http://dx.doi.org/10.1016/j.ppnp.2016.06.005

Reference: JPPNP 3616

To appear in: Progress in Particle and Nuclear Physics



Please cite this article as: J. Sonnenschein, Holography inspired stringy hadrons, *Progress in Particle and Nuclear Physics* (2016), http://dx.doi.org/10.1016/j.ppnp.2016.06.005

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Holography Inspired Stringy Hadrons

Jacob Sonnenschein The Raymond and Beverly Sackler School of Physics and Astronomy, Tel Aviv University, Ramat Aviv 69978, Israel

June 20, 2016

Abstract

Holography inspired stringy hadrons (HISH) is a set of models that describe hadrons: mesons, baryons and glueballs as strings in flat four dimensional space time. The models are based on a "map" from stringy hadrons of holographic confining backgrounds. In this note we review the "derivation" of the models. We start with a brief reminder of the passage from the $AdS_5 \times S^5$ string theory to certain flavored confining holographic models. We then describe the string configurations in holographic backgrounds that correspond to a Wilson line, a meson, a baryon and a glueball. The key ingredients of the four dimensional picture of hadrons are the "string endpoint mass" and the "baryonic string vertex". We determine the classical trajectories of the HISH. We review the current understanding of the quantization of the hadronic strings. We end with a summary of the comparison of the outcome of the HISH models with the PDG data about mesons and baryons. We extract the values of the tension, masses and intercepts from best fits, write down certain predictions for higher excited hadrons and present attempts to identify glueballs.

Download English Version:

https://daneshyari.com/en/article/5495618

Download Persian Version:

https://daneshyari.com/article/5495618

<u>Daneshyari.com</u>