

# 1 The Holography inspired stringy hadron model (HISH). A review and Open questions

Abstract-

The HISH model has been quite successful in accounting for the spectra and decay width of mesons and baryons of all flavor content. It also provides useful tools to identify glueballs and exotic hadrons.

This talk will be divided into two parts: (i) A review of the model and the comparison of its results with experimental data. (ii) A list of several of the more challenging open questions that the model faces. These include:

- It is a fact that for all hadrons  $a - S < 0$ , where  $a$  is the intercept and  $S$  is the spin of the hadron. This implies that there is a repulsive Casimir force on the ends of the hadronic string which prevents its collapse into a tachyonic state, even at zero orbital angular momentum. A Stringy model that admits this property and fits well the experimental values of  $a - S$  are still wanted.
- The scattering amplitude of strings with massive endpoint particles that carry electric charges and spins. In particular revealing the stringy nature of hadrons via their interaction with EM fields. Analyzing the scattering of strings in holographic confining backgrounds and the attempt to account for asymptotic freedom, namely the bending of the trajectory at large negative  $t$
- The stringy and holographic descriptions of the transition from a deconfining phase to the hadronic phase, namely the hadronization process in the form of string formation.