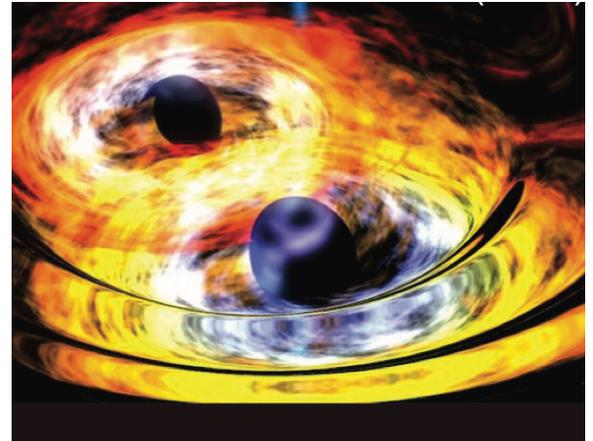


QCD Meets Gravity 2019



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Welcome! If you have any question please ask me or Cristina.

QCD Meets Gravity 2019

5th in the series! Each year it grows.

Developments:

Reformulation of GR via double copy to make progress on various topics.

Multiloop gravity and BCJ.

Classical double copy.

Web of theories. (Marco Chiodaroli's overview)

Classifications of supergravities.

Connections to string theories.

Geometric formulations of amplitudes.

Applications to gravitation waves. Lot's of new friends.

Etc.

Our field is clearly vibrant and growing.

Alessandra Buonanno, Bhaumik Lecture Tue 4 PM at CNSI

Expect an exciting conference

Some “excitement”

Thibault Damour has a new paper: [arXiv:1912.02139](https://arxiv.org/abs/1912.02139)

1. Claims our 3rd Post-Minkowskian Hamiltonian is wrong. [BCRSSZ arXiv:1908.01493](https://arxiv.org/abs/1908.01493)
Gives an alternative formula.
2. Claims the paper Amati, Ciafaloni, Veneziano (ACV) has wrong massless high-energy deflection angle. Gives an alternative formula. [ACV: Nucl.Phys. B347 \(1990\) 550.](https://arxiv.org/abs/1908.01493)
3. For good measure, diparages at the entire concept of using quantum amplitudes for classical physics.

1st reaction: Delighted to be in the same club as ACV!

2nd reaction: His claims are puzzling.

3nd reaction: A great opportunity to win a bottle of fine French wine.



**French wine:
Saint Julien 2011**

Thibault Damour enthusiastically accepts the bet! He is quite sure he is right.



**California wine:
Beaulieu Vineyard Private Reserve 2015**

Who is going to win the bet?

Three directly relevant talks:

- 1. Mikhail Solon:** Explains why we are confident BCRSSZ results are correct.
ZB, Cheung, Roiban, Shen, Solon and Zeng
- 2. Paolo Di Vecchia:** Provides evidence from $N = 8$ sugra that ACV scattering angle correct.
Di Vecchia, Naculich, Russo, Veneziano, White
- 3. Julio Parrara-Martinez:**
 - *Directly confirms* that ACV angle is correct, contrary to Thibault's claim.
 - Uses $N = 8$ sugra to provide evidence that BCRSSZ indeed have correct high-energy behavior.
Abreu, Jaquier, Febres Cordero, Ita, Page, Ruf, Sotnikov;
ZB, Ita, Parra-Martinez, Ruf; Parra-Martinez (all in preparation)

Damour needs to explain how he can be wrong about ACV scattering angle, but right about BCRSSZ.

A pity Thibault Damour is not here to explain this.

To be clear: Damour's conjectures are in deep trouble.

I looks forward to an exciting conference.

- **Afternoons are free for discussion.**
- **Wednesday afternoon would be a good time to go to the beach, the Getty, LACMA, La Brea Tar Pits, etc.**



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