

About me ..

Racha Cheaib



2005-2016



03/2016-09/2018



09/2018-08/2020

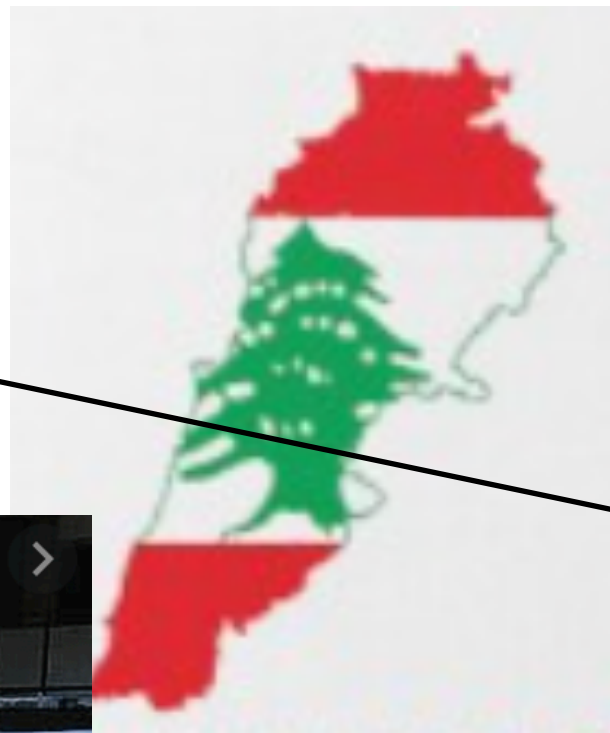


09/2020 -

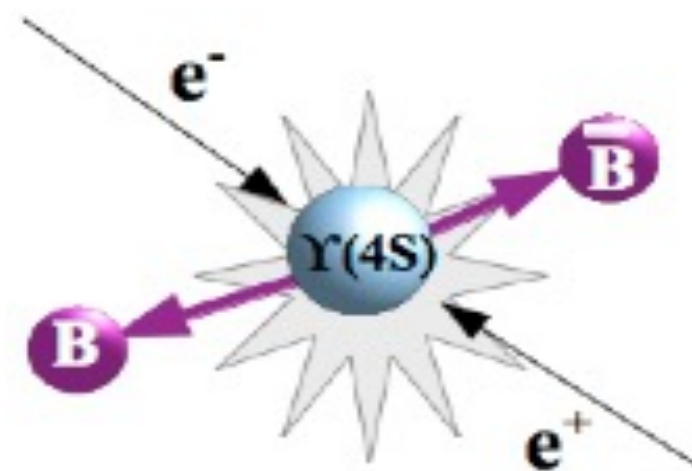


Quick Background:

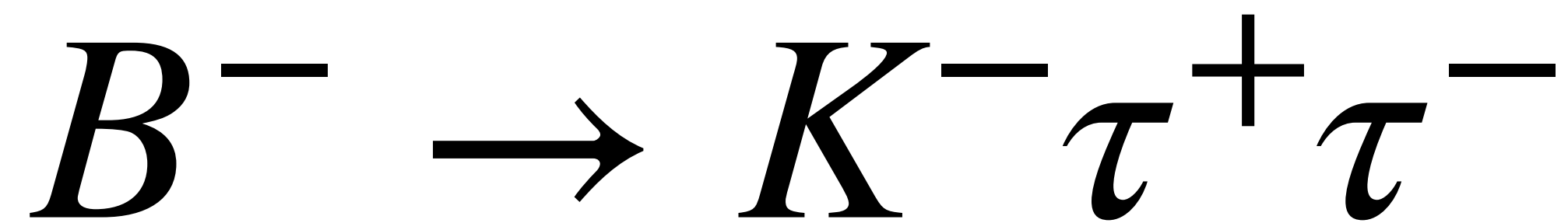
- I am new to Hamburg and Germany.
- Born and raised in Lebanon.
- Moved to Canada in 2001.



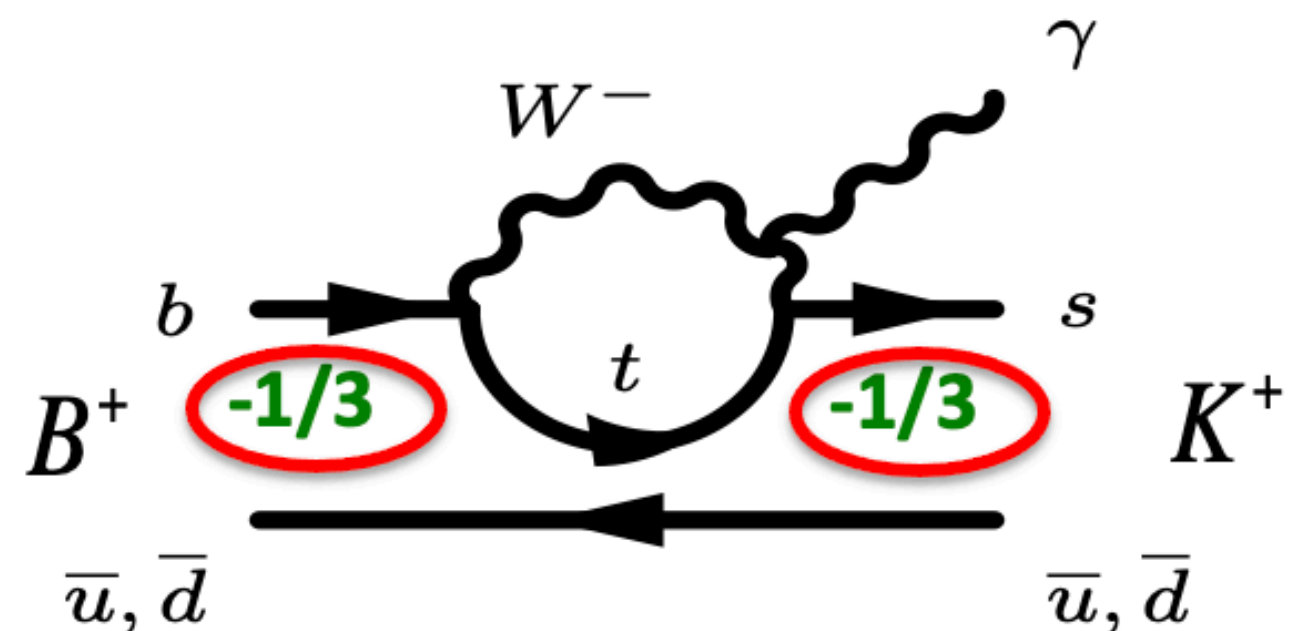
- Undergraduate, Master's and PhD at McGill University in Montreal, Canada...
- Worked on the BaBar experiment.



PhD work :



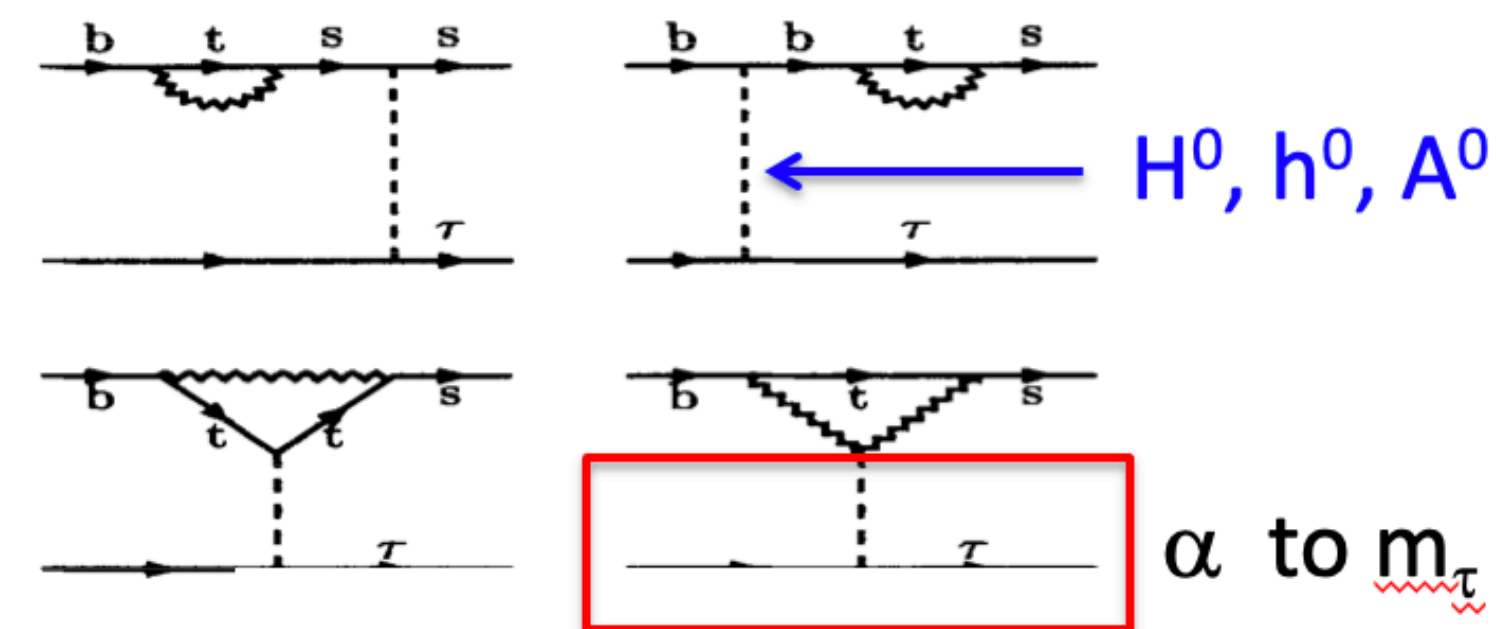
Rare decay in the Standard Model.



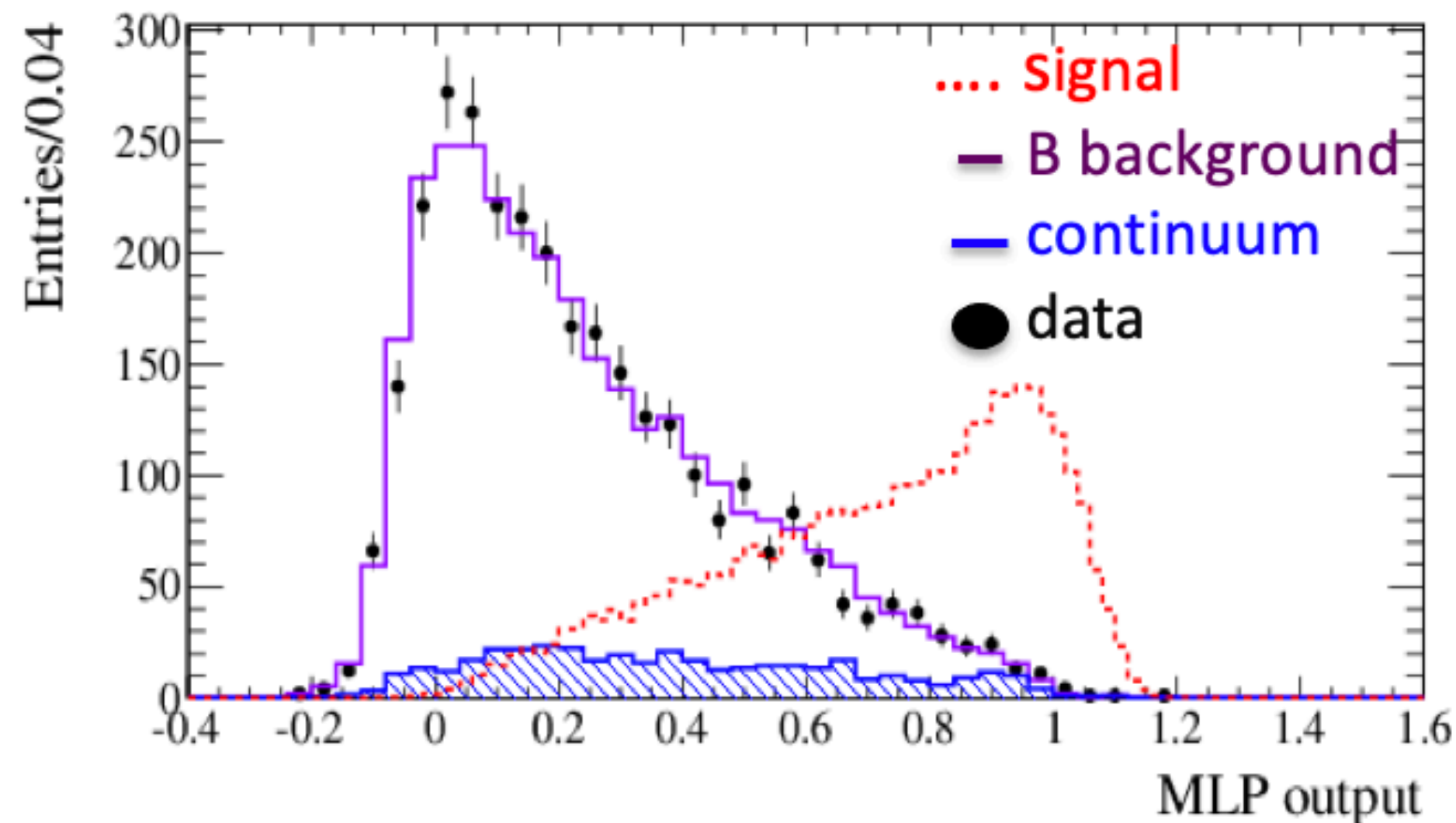
Suppressed SM decay



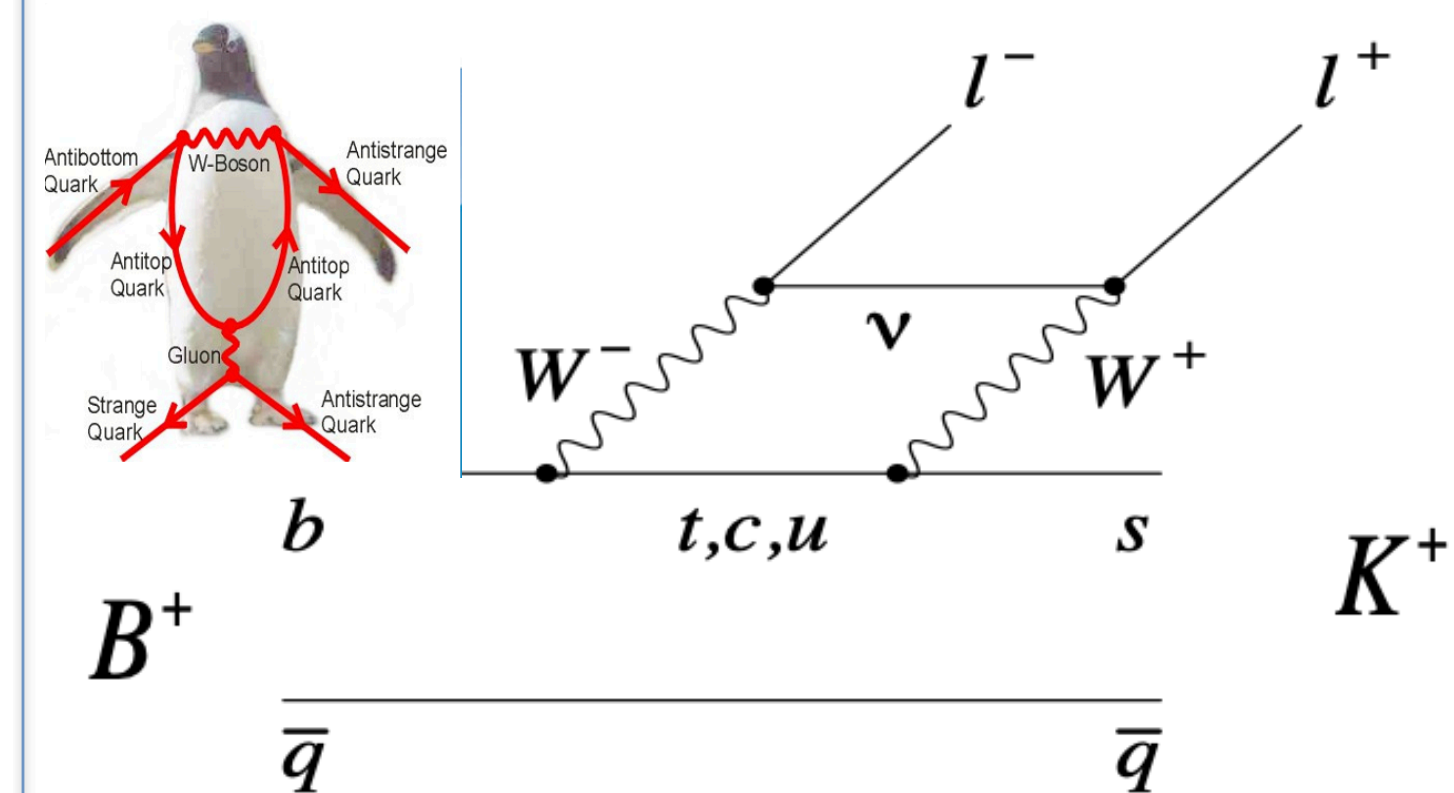
New Physics can lead enhancements to the branching fraction:



Use MVA to separate between signal and background



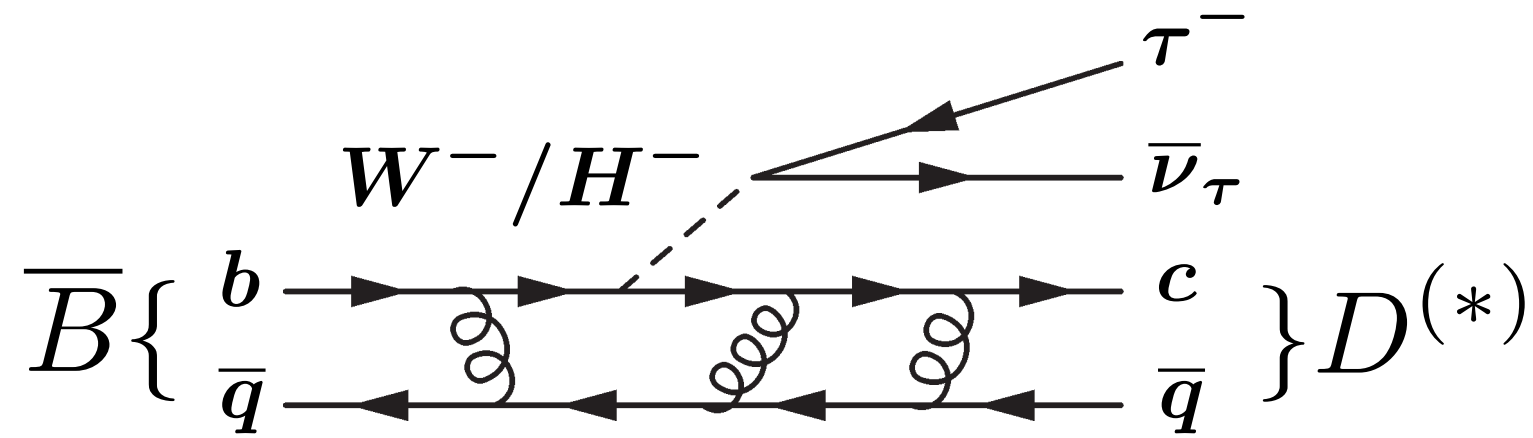
No significant signal was observed.
 Upper limit determined at 90 % CL of 2.25×10^{-3} .
 First and only measurement of this mode.



Postdoc years

- Two years at University of Mississippi working on SM measurement of semileptonic B decays, implementing hadronic and SLtagging, develop skim package.
- Two years at University of British Columbia working on measuring the $R(D)$ and $R(D^*)$ anomaly at Belle II. My service task is convenor of one of the Belle II physics groups and skim production manager.
- Recently started at DESY, still working on the same analysis and same service tasks, planning for result by Winter 2021.
- *Spoiler alert: Moving to a new country during a pandemic is highly restrictive.*

R(D) and R(D*)

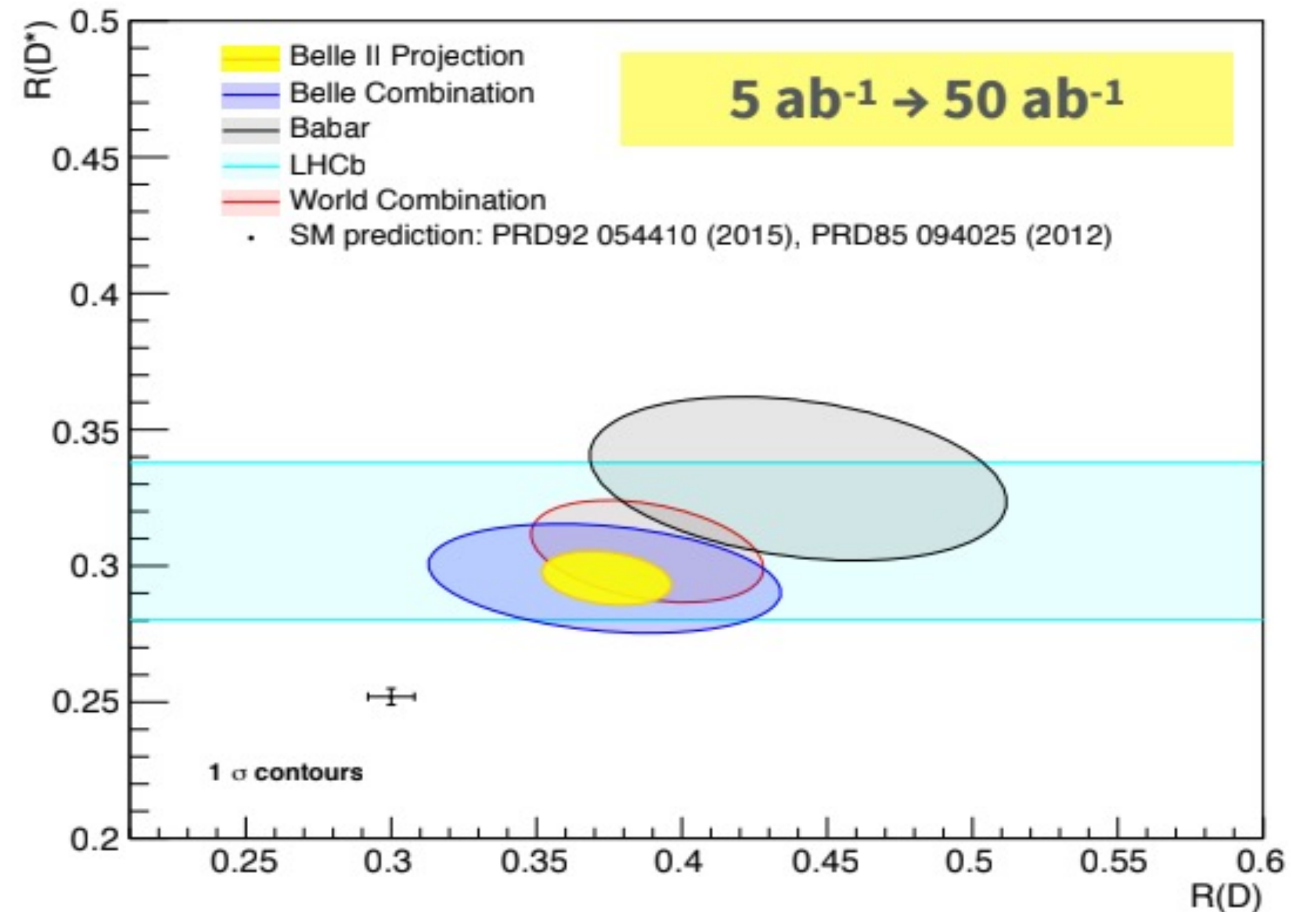
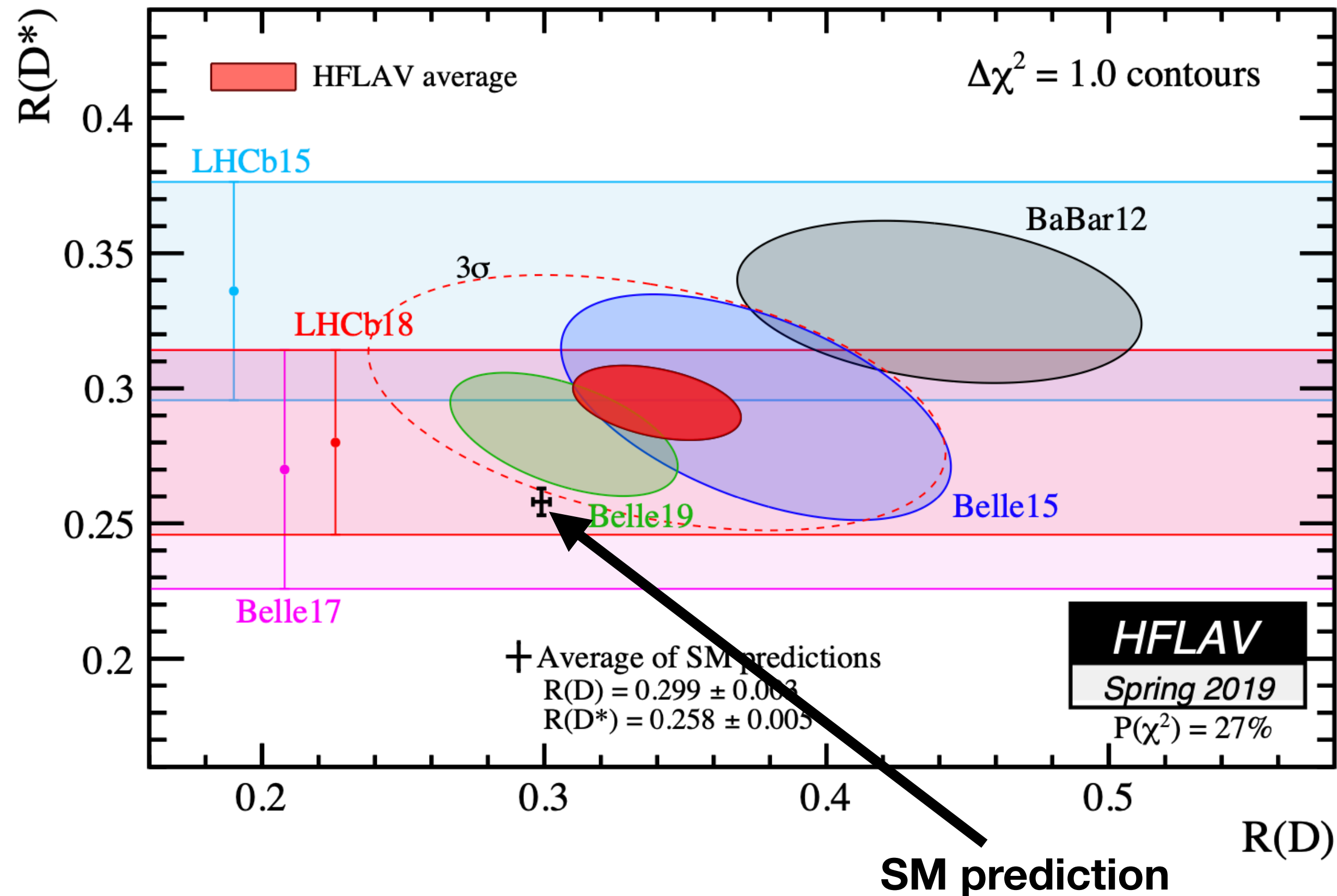


New Physics can explain deviation, such as leptoquarks.

Goal: measure with the larger Belle II dataset and confirm or dismiss the anomaly.

$$R(D^{(*)}) = \frac{\mathcal{B}(B \rightarrow D^{(*)} \tau \nu)}{\mathcal{B}(B \rightarrow D^{(*)} \ell \nu)}$$

Many systematic uncertainties cancel with the ratio



I have other interests,

- I like to read about history, politics, etc.. ran a social book club in Montreal for many years.
- I am “relatively” socially involved (in Canada and not in Germany yet) .. food and clothing drives, blood donations, Christmas gifts for families below poverty line, drug awareness seminars, etc..
- Soccer is a thing in my home.
- I don't have a cat.