

Physics it is a-Changing

FINAL draft

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2	Wessel
Corrupt Theorist 1	John E
Corrupt Theorist 2	Gian
Young Theorists 1	Matthew
2	Francesco
3	Sergey
4	Dani
ATLAS	Bruce
CMS	Ara
Brexit 1	Jeanne
Brexit 2	Michelle
Frexit	Nanie
Quitally	Elena
Chump:	Ben
LHCb	Alberto

LIGO

Guido

VIRGO

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Sound technician

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[START Times they are a changing music.]

Come all you theorists
Who prophesize with your pen
And look at the data
The chance won't come again
And don't be so sure
While the collider still spins
And there's no telling what that it's claiming
For the theories now may not last till then

Physics it is a-Changing

[Chorus]

Cause physics it is a-changing

Cause physics it is a-changing

[Chorus]

Cause physics it is a-changing

Cause physics it is a-changing

[END Times they are a changing music.]

[START Too much of nothing music.]

Too much of nothing

Makes a theorist ill at ease

Too much of nothing

Makes a theorist ill at ease

1 - Too much of nothing

[END Too much of nothing music.]

CET1: What is Bob Dylan is talking about. Maybe the economic situation in Europe and the US is bad, and the people are revolting against the establishments everywhere, but the situation in physics has never been so good! We understand more of the universe than ever before.

[Depressed YOUNG THEORISTS on stage.]

YT1: Bullshit! The situation in physics has never been so bad!

YT2: Its OK for you baby-boomers, but what about us? Everything agrees with the Standard Model!

[ATLAS and CMS show agreement.]

CET1: What are you complaining about? The Higgs boson has been discovered!

YT3: But it was predicted over 50 years ago, when you were still in high school, and the discovery was 4 years ago, when I was still in graduate school.

YT4: And it looks just like the Standard Model.

[ATLAS and CMS show agreement.]

YT1: And the universe is maximally boring, with no deviations from Friedman-Robertson-Walker and inflation.

CET2: But gravitational waves were discovered this year!

YT2: But they were predicted 100 years ago, before even HE was born *[indicating JE]*, let alone YOU, and they look just like Einstein predicted.

YT3: And there is no sign of the supersymmetry YOU BOTH told us to work on.

YT4: The only thing left to do is calculate next-to-next-to-next-to-next-to-next-to leading order corrections.

CET1: I think you left one out.

YT1: The calculations are getting harder and harder.

YT2: And they are all done by computer, anyway. Automation is taking away all our jobs.

YT3: There aren't any jobs, anyway.

YT4: And the few jobs are all getting taken by Indians and Chinese.

YT1: And Italians!

YT2: The situation in physics has never been so bad!

YT3: You in the particle physics establishment have let us down.

YT4: We need to exit from the Standard Model.

YTs: SMexit! SMexit! SMexit! SMexit! SMexit! SMexit!

[Exeunt]

[START Blowing in the Wind music.]

How many years must the LHC run
How many searches must there be?
How much Monte-Carlo must be crunched
To ensure background reliability?
Yes and how many channels must be analyzed
Before a real anomaly we see?

[Chorus]

The answer my friend, is not at the LHC.
The answer is not at the LHC.

How many years must we dedicate

to NNNNNNLO calculation?
How much higher order code must we write
When debugging exhausts our patience?
Yes and when will we have another 3-sigma surprise
As we really need five hundred more citations?

[Chorus]

The answer my friend, is not at the LHC.
The answer is not at the LHC.

[Chorus]

The answer my friend, is not at the LHC.
The answer is not at the LHC.

[END Blowing in the Wind music.]

[START Highway 61 Revisited music.]

2- Article 50 Revisited

[CAST shouts words in boldface]

Farage said to Cameron "leave the EU!"
Cam says "man, that **can't be true!**"
Nige says "no". Cam says "**what?**"
Nige says "you can do what you want Cam but,
The next time you see the voters you better flee."
Cam says "how do you want this leaving to be?"
Nige says "how about article 50"
Nige says "how about article 50"

[Most of CAST shouts "No", one shouts "Da"]

[END Highway 61 Revisited music.]

Brexit1: It's all right for you physicists.

Brexit2: You don't have to stay here at CERN forever.

Frexit: With the new CERN salary grid, our salaries are getting lower and lower.

Quitally: And soon we will have to wear badges all the time.

Brexit1: And with the new member states curried electrified weasel is always on the menu in the cafeteria.

Frexit: With all these new member states we have to fill in even more forms for the CERN administration.

Quitally: And the WoMen's Club is now open to men.

Brexit2: The LGBT Club and the ConCERNed for Humanity club have been banned.

Frexit: But those are two good things!

Quitally: Will the Theory Xmas party be banned next?

Brexit1, Brexit2, Frexit, Quitally: We want to exit from CERN! CERNexit!
CERNexit!

CET2: Your problems are solved! Under my glorious leadership the Theory Department is independent again, and we theorists can do what we want.

YT3: Not exactly. After they leave SCOAP3 we aren't allowed to publish in American journals or JCAP any more! But Russian journals are OK!

CET2: Stop complaining! Under my glorious leadership the theory corridors have carpets. And there are new toilets. And there is a lovely new parking lot.

Quitally: But now there are no spaces in the parking lot.

CET2: And now we are getting lovely new firewalls to keep the administration out.

Brexit1, Brexit2, Frexit, Quitally: How can we exit from CERN! CERNexit! CERNexit!

Brexit2: Let's hold a referendum on that.

Brexit1: *[to audience]* Yes or No? *[all shout No, one says Da]*

[Exeunt Brexit1, Brexit2, Frexit, Quitally]

YT1: What do we care?

YT2: All we want is new physics to exit from the Standard Model.

YT3: We need a new leader to make physics great again.

CET1: We found a possible new leader, almost as old as me. His fee for a personal appearance was too high, but we have him on Youtube.

[START Apprentice video clip.]

<https://www.youtube.com/watch?v=qgiWk4zWnJo>

3 - Mr Tangerine Man

[END Apprentice video clip.]

[CHUMP strides on stage, wearing red baseball hat.]

Chump: My name is Dumb Old Chump. Whether you vote for me or not, I will be the next Dictator-General: I will make CERN great again! *[Gives victory signal, eyes females lecherously.]*

YTs: Lock him up! Lock him up! Lock him up!

Chump: Vote for me, and I will build a beautiful wall around CERN, to keep the non-member-state physicists and weasels out, and I will make Switzerland pay for it.

YTs: Lock him up! Lock him up! Lock him up!

Chump: Vote for me, and you will all have jobs as security guards.

[Security Guard tries to hand out uniforms, they refuse.]

YTs: Lock him up! Lock him up! Lock him up!

Chump: Vote for me, and I will build a beautiful new Directorate building, the Chump tower. It will be the biggest erection on the CERN campus.

[Brexit1 displays erection.]

YTs: Lock him up! Lock him up! Lock him up!

Chump: Vote for me or not, and I will repeal the CLOUD experiment. Climate change is a hoax forced upon you by the Chinese.

YTs: Lock him up! Lock him up! Lock him up!

Chump: Vote for me, and I will liberate you from the tyranny of Hillariola and the experimentalists.

YTs: Lock her up! Lock her up! Lock her up!

Chump: The Standard Model is a hoax forced upon you by the experimentalists so as to make theorists unnecessary. I will repeal it.

YTs: Lock them up! Lock them up! Lock them up!

Chump: I will repeal the Standard Models of physics, of cosmology, of politics, of common decency, of everything!

YT4: *[On knees]* You will make physics great again. We want to work for you.

Chump: If you want to work for me, you must first learn to tweet at 3am.

YTs: *[On knees]* Your tweet is our command, o great **Chump**.

Chump: If you want to work for me, you must become my apprentices. I will set you tasks and will give you jobs as my science advisors if you achieve them.

YTs: Lock him up! Lock him up! Lock him up!

YTs: *[On knees]* SMexit! Your tweet is our command, o great **Chump**.

Chump: Your first task is to unify all the particle interactions.

YT1: No problem: the gauge couplings evolve. *[Writes on board.]*

YT2: The grand unified theory predicts the right value of the weak mixing angle. *[Writes on board.]*

YT3: But the theory also predicts proton decay. *[Writes on board.]*

YT4: Which has not been detected....

Chump: You failed! *[To YT4]* You are fired! *[To YT1,2,3]* Your task is to solve the hierarchy problem.

YT1: That's not difficult, we just postulate low-scale supersymmetry. *[Writes on board.]*

YT2: Which has not been detected....

[ATLAS and CMS show absence of supersymmetry.]

YT3: And the theory can also explain the dark matter. *[Writes on board.]*

YT1: Which has also not been detected....

YT2: How about extra dimensions instead, big enough to contain Chump's ego! *[Writes on board.]*

YT3: But the LHC has not discovered any Kaluza-Klein states

[ATLAS and CMS show absence of KK states.]

YT1: We have a new theory that works like clockwork. *[Writes on board.]*

Chump: I have no time for that. You failed! *[To YT1]* You are fired! *[To YT2,3]* Your task is to explain the origin of the matter in the Universe.

YT2: That's easy! We just need the expansion of the Universe, some CP violation, and interactions that violate baryon number. *[Writes on board.]*

YT3: But the CKM mechanism in the Standard Model does not give enough CP violation

YT2: And LHCb has not detected any CP violation beyond CKM

[LHCb shows CKM plot.]

Chump: You failed! *[To YT2]* You are fired! *[To YT3]* Your final task is to construct a quantum theory of gravity.

YT3: What shall I do? This task is really difficult!

YT2: The string theorists have been trying for years.

YT3: But there is no experimental evidence for it.

YT4: Maybe that does not matter in this post-truth era?

YT1: Time for loop quantum gravity?

YT2: That theory is really loopy.

YT3: We need to ask the corrupt physics establishment for its advice.

[START Knocking on Heaven's Door music.]

Mama, take this twitter tag from me

I won't use it anymore.

I won the election, how can that be? *[Sergey takes credit.]*

I feel like I'm knockin' on heaven's door.

[Chorus]

Knock, knock, knockin' on heaven's door

Knock, knock, knockin' on Fabiola's door

4 - Knocking on Heaven's Door

Mama, put this campaign in the ground

I can't do it anymore

I'm unprepared but DG bound

Wait till you see what's now in store!

[Chorus]

Knock, knock, knockin' on heaven's door

Knock, knock, knockin' on Fabiola's door

[END Knocking on Heaven's Door music.]

CET1: You are going to need supersymmetric help. You must make a sacrifice to the statue of Luis the string god.

[CET1 acts as high priest, holds up picture of Luis.]

YT4: What sort of sacrifice?

CET1: A virgin.

YT1: Where are we going to find one of those? *[They look for one.]* Virgins are extinct.

CET1: Your problem, not mine.

YT2: We do have a LIGO ... *[Enter LIGO]*

YT3: Maybe we can find VIRGO ...

[ATLAS and CMS drag on VIRGO.]

YT4: Let us sacrifice her.

[LIGO sacrifices her, and examines her entrails.]

YT1: I do not see a theory of quantum gravity here. I was right, and virgins ARE extinct.

Chump: You have all failed. You are all fired. I have chosen Lee Smolin as my science advisor. He is a true believer in alt-wrong theories. He has this great new theory predicting a particle weighing 750 GeV, which will save particle physics!

ATLAS & CMS: But we have proved that it does not exist.

Chump: You have been corrupted by the theoretical physics establishment. The 750 GeV particle will make physics great again! I will instruct my Secretary for Energy to fund 750 research.

ATLAS & CMS: But it does not exist!

Chump: In this post-truth era, it does not matter whether it exists. Just spread the fake news on Twitter, and CERN will be great again! And I will win the Nobel physics prize.

[START Knocking on Heaven's Door music.]

[Chorus]

Heaven's, knock, knockin' on our door
Fabiola's, knock, knockin' on our door

5 - Heaven's Knocking on our Door

[Chorus]

Heaven's, knock, knockin' on our door
Fabiola's, knock, knockin' on our door

[END Knocking on Heaven's Door music.]

LIGO: Not so fast, **Chump**, the next Nobel physics prize is for us. You will have to wait your turn.

CET1: Anyway giving you the Nobel physics prize would be even crazier than giving Obama the peace prize.

Chump: I am going to get that, too, by kissing up to Putin. *[Chump kisses Sergey]*

CET2: Or giving Dylan the literature prize.

Chump: I am going to win that, too. My tweets are poetry as much as his lyrics. And the medicine prize, too. I am a world expert on ladies' pussies. *{Brandishes butter.}* And the economics prize, too, when I make the CERN budget great again.

CET1: How do we get rid of this narcissistic megalomaniac, and make the world safe for truth, democracy, peace and physics?

LIGO: If we make a strong enough gravitational wave, **Chump** will be destroyed by tidal forces.

[Cast makes 3 Mexican waves. Chump is buffeted, totters and destroyed.]

[START Mr Tambourine Man music.]

Hey, Mr. Tangerine man, here's a song for you
We're not stupid and there is no place here for you
Hey, Mr. Tangerine man, here's a song for you
We all heed the warning to stop following you

Though we know the SM's empire is built upon the sand
BSM's not grand
We're left blindly here to stand but still are thinking
The LHC amazes us, we're stranded in the'ry
We have no data treat
And the other 'speriment's no good for mod'ling

[Chorus]

Hey, Mr. Tangerine man, here's a song for you
We're not stupid and there is no place here for you
Hey, Mr. Tangerine man, here's a song for you
We all heed the warning to stop following you

Though we hear you lying, spinning, swinging madly across the world
We think you are absurd
We all are giving you the bird
And here around CERN there are no walls out facing
And here you hear loud noises of skipping laughs of glee
At your tangerine toupee

You're just a ragged clownish twat
We couldn't care where you are at
You're just a idiot we're seeing that you're crazy

[Chorus]

Hey, Mr. Tangerine man, here's a song for you
We're not stupid and there is no place here for you
Hey, Mr. Tangerine man, here's a song for you
We all heed the warning to stop following you

[Chump shows The End]