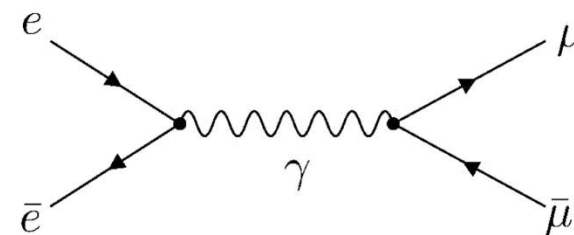


FEYNRULES, FEYNARTS AND FEYNCALC. INSTALLATION AND LAUNCH

AN INTRODUCTION TO MATHEMATICA TOOLS FOR HEP

MARTÍNEZ MARTÍN, JAVIER



13-16 June 2025
UCM-IPARCOS, Madrid

- Wolfram Mathematica for High-Energy Physics
- FeynRules, FeynCalc, FeynArts
- MadGraph5_aMC@NLO



Organization (UCM-IPARCOS):

Javier Martínez Martín
Carlos Quezada Calonge
Alexandre Salas-Bernárdez
Juan José Sanz Cillero

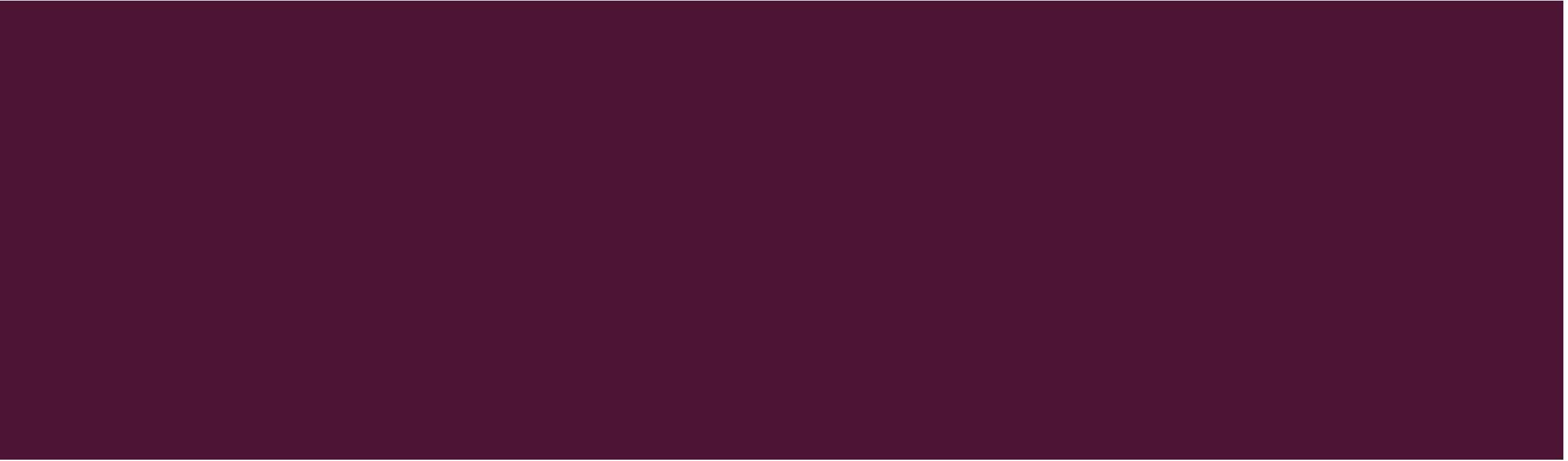
TABLE OF CONTENTS

- FeynRules. Installation
- FeynRules. Launch
- FeynArts. Installation
- FeynArts. Launch
- FeynCalc. Installation
- FeynCalc. Launch



FEYNRULES

INSTALLATION



FEYNRULES. INSTALLATION

- Access the web:

<https://feynrules.irmp.ucl.ac.be>

FEYNRULES. INSTALLATION



Wiki: WikiStart

Login | Preferences | Help/Guide | About Trac

Wiki Timeline

Start Page | Index | History

FeynRules



A Mathematica package to calculate Feynman rules

FeynRules is a Mathematica® package that allows the calculation of Feynman rules in momentum space for *any* QFT physics model. The user needs to provide FeynRules with the minimal information required to describe the new model, contained in the so-called model-file. This information is then used to calculate the set of Feynman rules associated with the Lagrangian. The Feynman rules calculated by the code can then be used to implement the new physics model into other existing tools, such as MC generators. This is done via a set of interfaces which are developed together and maintained by the corresponding MC authors.

FeynRules 2.0

- [Download FeynRules 2.3](#) 1
- New features relative to FeynRules 1.0
 - Support for two-component Weyl fermion notation.
 - Support for spin-3/2 and spin-2 fields.
 - Support for superspace notation and calculations.
 - Automatic mass diagonalization.
 - Automatic generation of FeynArts generic files.
 - New Universal FeynRules Output (UFO) interface.
 - New Whizard interface.
 - Automatic calculation of 1 to 2 decays.
 - Speed and efficiency improvements.
 - New web-based validation.
 - Computation of the R2 and UV counterterms for NLO.

Manual

- [Download locally](#) (includes a table of contents) 2
- [Download from arXiv](#)
- [Up-to-date for FeynRules 2.0](#)

Model Database

- [Go to model database](#) 3
 - Simple extensions of the Standard Model
 - Supersymmetric models
 - Extra-dimensional models
 - Strongly coupled and effective field theory models

1. Download the FeynRules package

For later:

2. Download the Manual

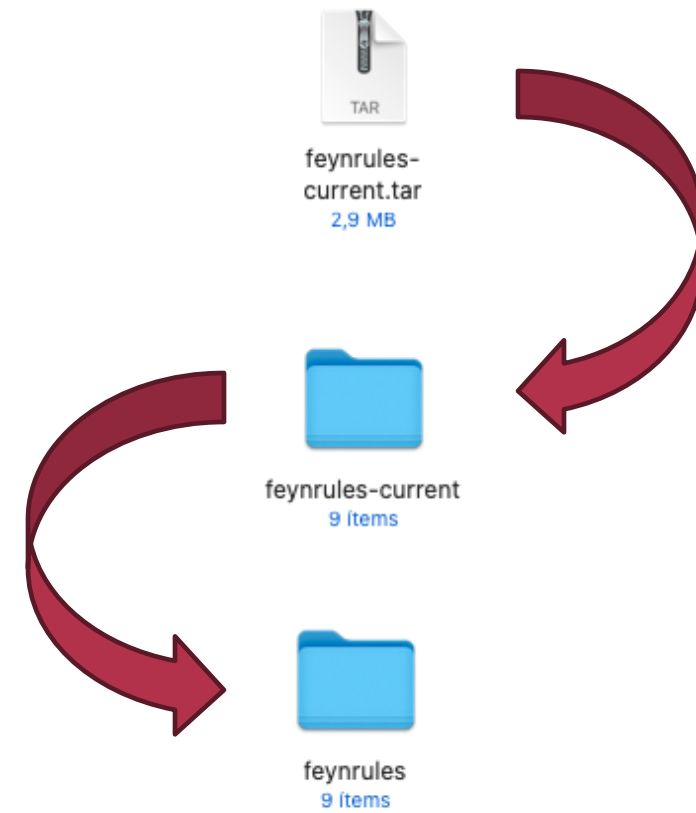
3. Find pre-built QFT

FEYNRULES. INSTALLATION

- Unzip the `feynrules-current.tar` file

- Rename the new folder to `feynrules`

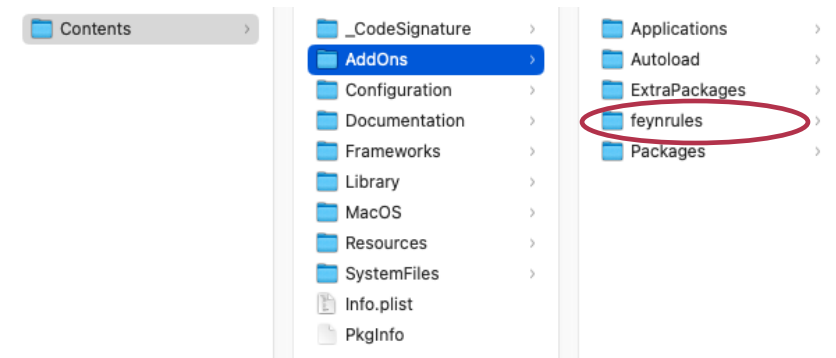
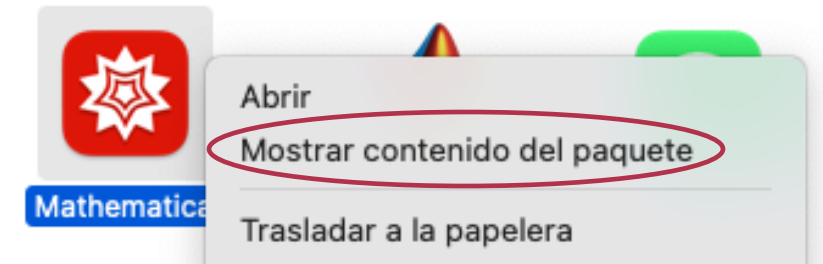
(You can choose another one actually later)



FEYNRULES. INSTALLATION

- Copy the *feynrules* folder
- Access the contents of your *Mathematica* installation
- Go to *Contents* > *AddOns* and paste it there

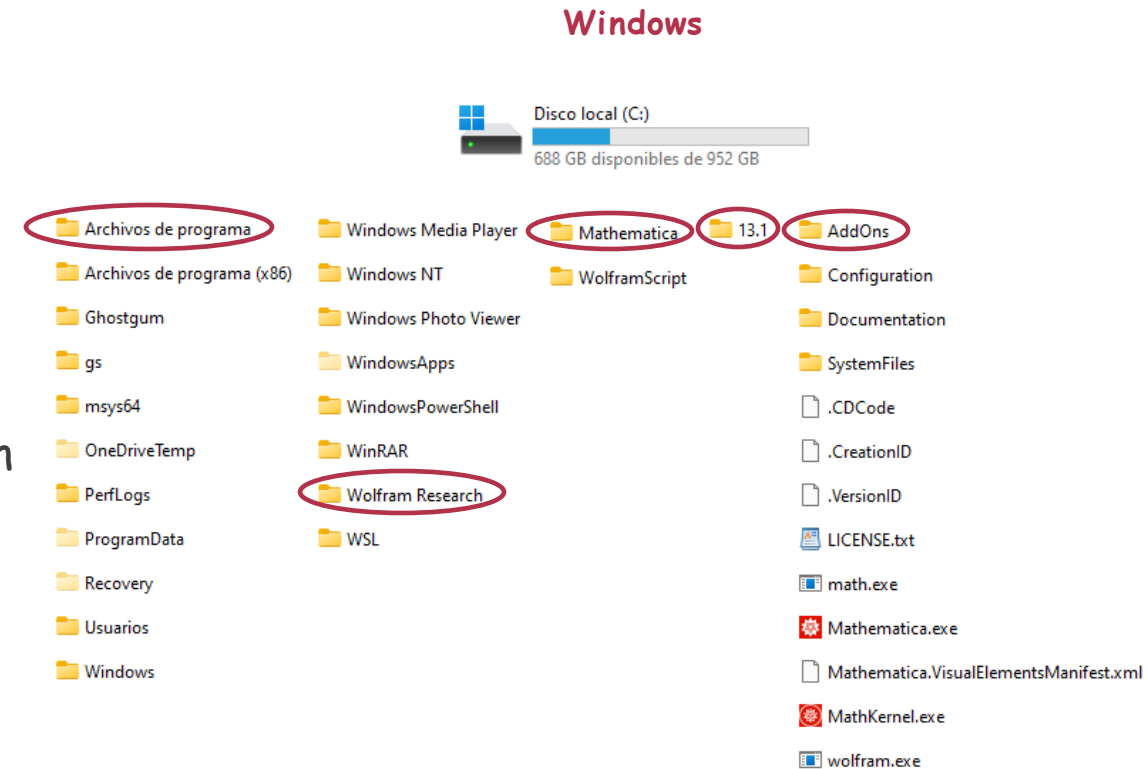
MacOS



DONE!

FEYNRULES. INSTALLATION

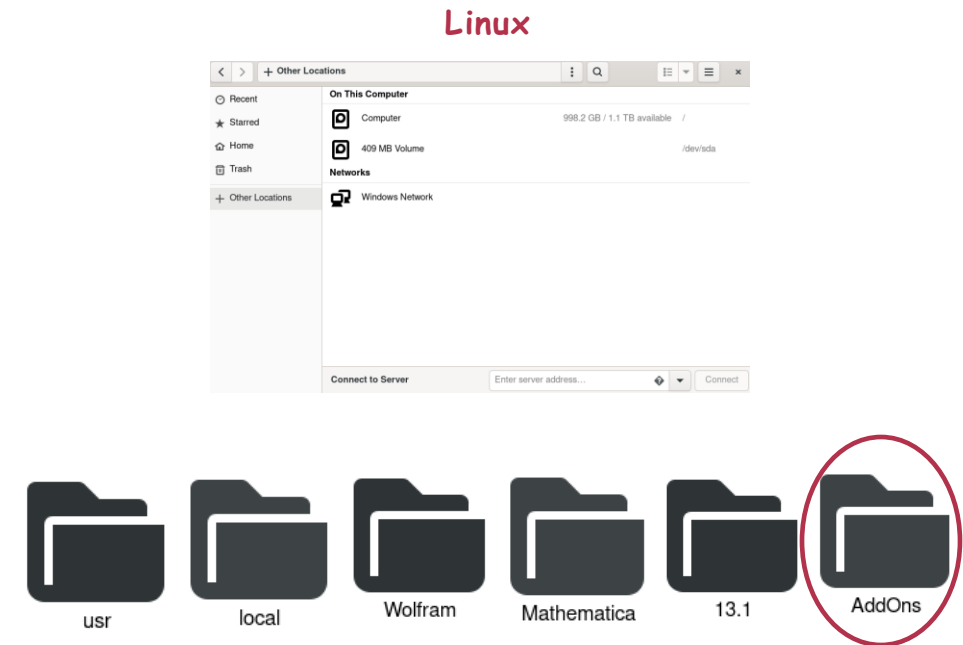
- Copy the *feynrules* folder
- Access the contents of your *Mathematica* installation
- Go to *Contents* > *AddOns* and paste it there



DONE!

FEYNRULES. INSTALLATION

- Copy the **feynrules** folder
- Access the contents of your **Mathematica** installation
- Go to **Contents > AddOns** and paste it there



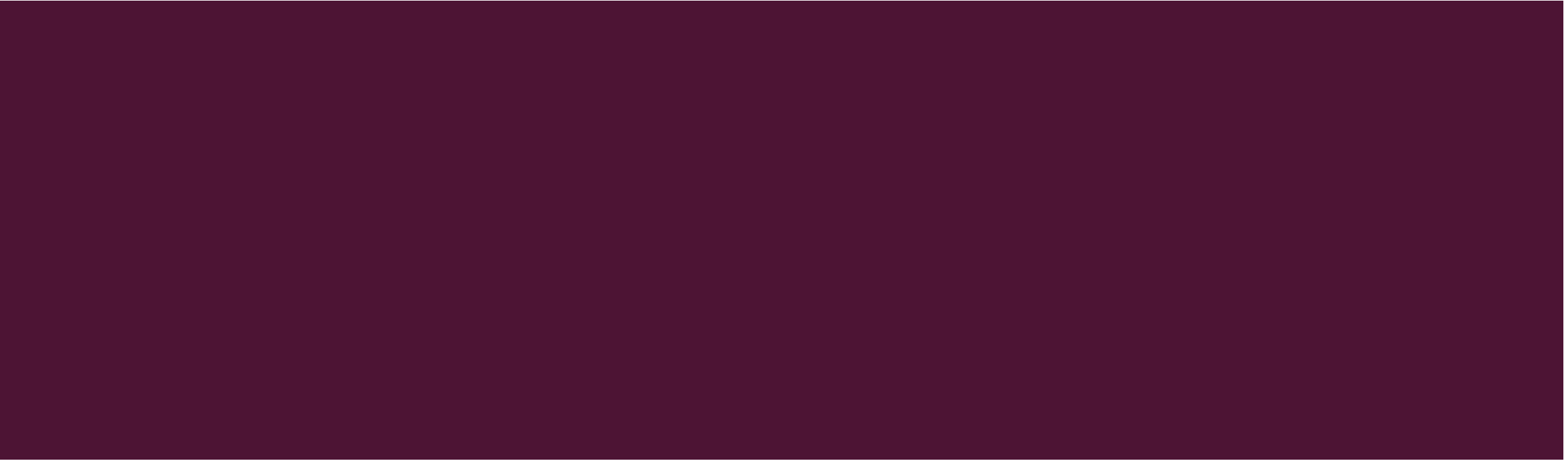
DONE!



FEYNRULES

LAUNCH

[MACOS](#) - [WINDOWS](#) - [LINUX](#)



FEYNRULES. LAUNCH

MacOS

- Open a new **Mathematica** notebook

1. Write and execute the command

```
Quit[];
```

This will terminate the kernel, losing any definitions previously made

It is needed because FeynRules needs to be executed clean

```
In[ ]: Quit[]; 1
[detenir núcleo]

2 In[1]: $FeynRulesPath = SetDirectory["/Applications/Mathematica.app/Contents/AddOns/feynrules"];
[establece directorio]

In[2]: << FeynRules` 3
- FeynRules -
Version: 2.3.49 ( 29 September 2021 ).
Authors: A. Alloul, N. Christensen, C. Degrande, C. Duhr, B. Fuks

Please cite:
- Comput.Phys.Commun.185:2250-2300,2014 (arXiv:1310.1921);
- Comput.Phys.Commun.180:1614-1641,2009 (arXiv:0806.4194).

http://feynrules.phys.ucl.ac.be

The FeynRules palette can be opened using the command FRPalette[].
```

FEYNRULES. LAUNCH

MacOS

2. Write and execute the command

```
$FeynRulesPath = SetDirectory[".../feynrules"]
```

This will tell the notebook where to look for the FeynRules installation

```
In[ ]: Quit[]; 1
[detenir nuclei]

2 In[1]: $FeynRulesPath = SetDirectory["/Applications/Mathematica.app/Contents/AddOns/feynrules"];
[establece directorio]

In[2]: << FeynRules` 3
- FeynRules -
Version: 2.3.49 ( 29 September 2021 ).
Authors: A. Alloul, N. Christensen, C. Degrande, C. Duhr, B. Fuks

Please cite:
- Comput.Phys.Commun.185:2250-2300,2014 (arXiv:1310.1921);
- Comput.Phys.Commun.180:1614-1641,2009 (arXiv:0806.4194).

http://feynrules.phys.ucl.ac.be

The FeynRules palette can be opened using the command FRPalette[].
```

FEYNRULES. LAUNCH

MacOS

3. Write and execute the command

```
<< FeynRules`;
```

This will launch FeynRules

```
In[ ]: Quit[]; 1
[detenir núcle]

2 In[1]: $FeynRulesPath = SetDirectory["/Applications/Mathematica.app/Contents/AddOns/feynrules"];
[establece directorio]

In[2]: << FeynRules`; 3

- FeynRules -

Version: 2.3.49 ( 29 September 2021 ).
Authors: A. Alloul, N. Christensen, C. Degrande, C. Duhr, B. Fuks

Please cite:
- Comput.Phys.Commun.185:2250-2300,2014 (arXiv:1310.1921);
- Comput.Phys.Commun.180:1614-1641,2009 (arXiv:0806.4194).

http://feynrules.phys.ucl.ac.be

The FeynRules palette can be opened using the command FRPalette[].
```

DONE!

FEYNRULES. LAUNCH

- Open a new **Mathematica** notebook

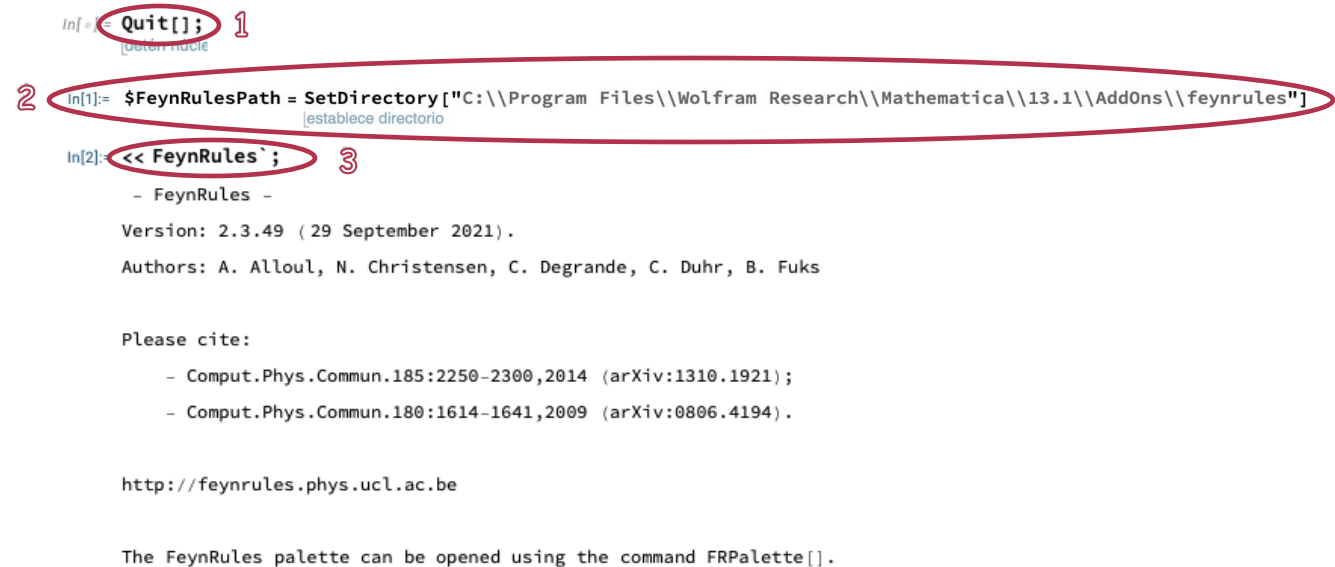
1. Write and execute the command

```
Quit[];
```

This will terminate the kernel, losing any definitions previously made

It is needed because FeynRules needs to be executed clean

Windows



```
In[ ]:= Quit[]; 1
In[1]:= $FeynRulesPath = SetDirectory["C:\\Program Files\\Wolfram Research\\Mathematica\\13.1\\AddOns\\feynrules"]; 2
In[2]:= << FeynRules`; 3
- FeynRules -
Version: 2.3.49 (29 September 2021).
Authors: A. Alloul, N. Christensen, C. Degrande, C. Duhr, B. Fuks

Please cite:
- Comput.Phys.Commun.185:2250-2300,2014 (arXiv:1310.1921);
- Comput.Phys.Commun.180:1614-1641,2009 (arXiv:0806.4194).

http://feynrules.phys.ucl.ac.be

The FeynRules palette can be opened using the command FRPalette[].
```

FEYNRULES. LAUNCH

Windows

2. Write and execute the command

```
$FeynRulesPath = SetDirectory[".../feynrules"]
```

This will tell the notebook where to look for the FeynRules installation

```
In[ ]:= Quit[]; 1
In[1]:= $FeynRulesPath = SetDirectory["C:\\Program Files\\Wolfram Research\\Mathematica\\13.1\\AddOns\\feynrules"] 2
In[2]:= << FeynRules` ; 3

- FeynRules -

Version: 2.3.49 (29 September 2021).
Authors: A. Alloul, N. Christensen, C. Degrande, C. Duhr, B. Fuks

Please cite:
- Comput.Phys.Commun.185:2250-2300,2014 (arXiv:1310.1921);
- Comput.Phys.Commun.180:1614-1641,2009 (arXiv:0806.4194).

http://feynrules.phys.ucl.ac.be

The FeynRules palette can be opened using the command FRPalette[].
```

FEYNRULES. LAUNCH

Windows

3. Write and execute the command

```
<< FeynRules`;
```

This will launch FeynRules

```
In[ ]:= Quit[]; 1
In[1]:= $FeynRulesPath = SetDirectory["C:\\Program Files\\Wolfram Research\\Mathematica\\13.1\\AddOns\\feynrules"] 2
In[2]:= << FeynRules`; 3

- FeynRules -

Version: 2.3.49 (29 September 2021).
Authors: A. Alloul, N. Christensen, C. Degrande, C. Duhr, B. Fuks

Please cite:
- Comput.Phys.Commun.185:2250-2300,2014 (arXiv:1310.1921);
- Comput.Phys.Commun.180:1614-1641,2009 (arXiv:0806.4194).

http://feynrules.phys.ucl.ac.be

The FeynRules palette can be opened using the command FRPalette[].
```

DONE!

FEYNRULES. LAUNCH

Linux

- Open a new **Mathematica** notebook

1. Write and execute the command

```
Quit[];
```

This will terminate the kernel, losing any definitions previously made

It is needed because FeynRules needs to be executed clean

```
In[ ]:= Quit[]; 1
[detenir núcleo]

2 In[1]:= $FeynRulesPath = SetDirectory["/usr/local/Wolfram/Mathematica/13.1/AddOns/feynrules"];
[establece directorio]

In[2]:= << FeynRules` ; 3
- FeynRules -
Version: 2.3.49 ( 29 September 2021 ).
Authors: A. Alloul, N. Christensen, C. Degrande, C. Duhr, B. Fuks

Please cite:
- Comput.Phys.Commun.185:2250-2300,2014 (arXiv:1310.1921);
- Comput.Phys.Commun.180:1614-1641,2009 (arXiv:0806.4194).

http://feynrules.phys.ucl.ac.be

The FeynRules palette can be opened using the command FRPalette[].
```

FEYNRULES. LAUNCH

Linux

2. Write and execute the command

```
$FeynRulesPath = SetDirectory[".../feynrules"]
```

This will tell the notebook where to look for the FeynRules installation

```
In[ ]:= Quit[]; 1
In[1]:= $FeynRulesPath = SetDirectory["/usr/local/Wolfram/Mathematica/13.1/AddOns/feynrules"]; 2
In[2]:= << FeynRules` ; 3
```

- FeynRules -
Version: 2.3.49 (29 September 2021).
Authors: A. Alloul, N. Christensen, C. Degrande, C. Duhr, B. Fuks

Please cite:

- Comput.Phys.Commun.185:2250-2300,2014 (arXiv:1310.1921);
- Comput.Phys.Commun.180:1614-1641,2009 (arXiv:0806.4194).

<http://feynrules.phys.ucl.ac.be>

The FeynRules palette can be opened using the command FRPalette[].

FEYNRULES. LAUNCH

Linux

3. Write and execute the command

```
<< FeynRules`;
```

This will launch FeynRules

```
In[ ]:= Quit[]; 1
[deten nable]

2 In[1]:= $FeynRulesPath = SetDirectory["/usr/local/Wolfram/Mathematica/13.1/AddOns/feynrules"];
[establece directorio]

In[2]:= << FeynRules`; 3

- FeynRules -

Version: 2.3.49 ( 29 September 2021 ).
Authors: A. Alloul, N. Christensen, C. Degrande, C. Duhr, B. Fuks

Please cite:
- Comput.Phys.Commun.185:2250-2300,2014 (arXiv:1310.1921);
- Comput.Phys.Commun.180:1614-1641,2009 (arXiv:0806.4194).

http://feynrules.phys.ucl.ac.be

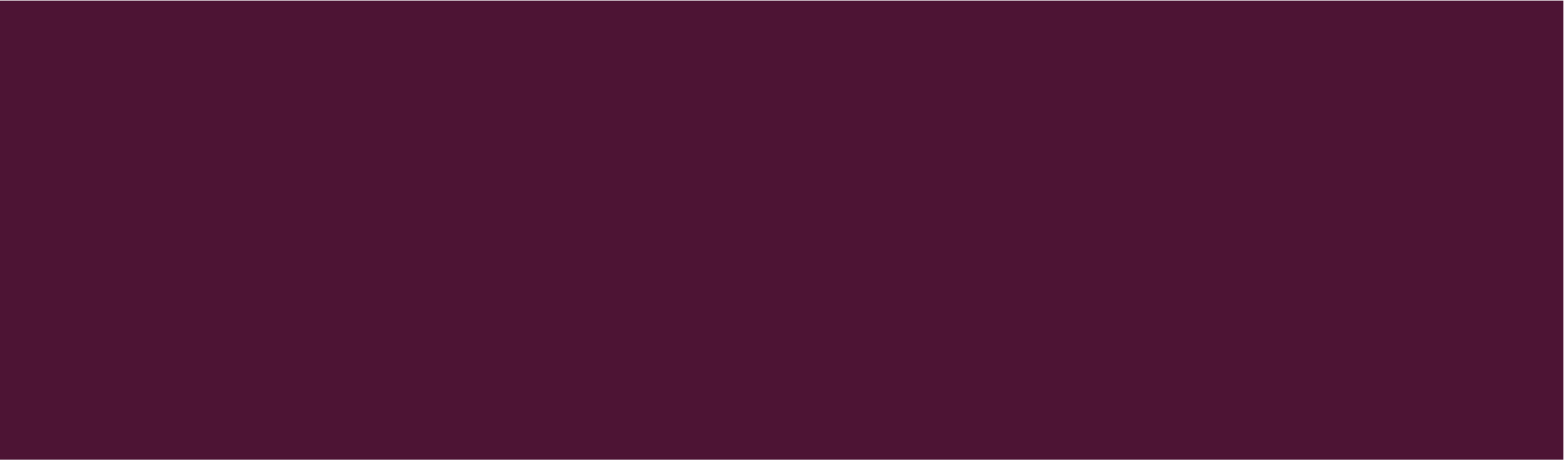
The FeynRules palette can be opened using the command FRPalette[].
```

DONE!



FEYNARTS

INSTALLATION



FEYNARTS. INSTALLATION

- Access the web:

<https://feynarts.de>

FEYNARTS. INSTALLATION

Downloads (hover over download link for MD5):

- [FeynArts-3.11.tar.gz](#) [3.15 MB] of 25 Mar 22  1
 - Added **FermionSign** function to help trace signs of diagrams with external fermions.
- [FeynArts-3.10.tar.gz](#) [2.55 MB] of 21 Jan 2019
- [FeynArts-3.9.tar.gz](#) [2.48 MB] of 23 Sep 2015
- [FeynArts-3.8.tar.gz](#) [1.6 MB] of 9 Jul 2013
- [FeynArts-3.7.tar.gz](#) [1.6 MB] of 4 Dec 2012
- [FeynArts-3.6.tar.gz](#) [1.54 MB] of 28 Mar 2011
- [FeynArts-3.5.tar.gz](#) [1.39 MB] of 16 Apr 2010
- [FeynArts-3.4.tar.gz](#) [1.36 MB] of 29 Jun 2009
- [FeynArts-3.3.tar.gz](#) [1.34 MB] of 21 Jan 2008
- [FeynArts-3.2.tar.gz](#) [1.32 MB] of 6 Mar 2007
- [FeynArts-3.1.tar.gz](#) [664 kB] of 7 Apr 2003
- [FeynArts-3.0.tar.gz](#) [578 kB] of 19 Oct 2001
- [FeynArts-2.2.tar.gz](#) [397 kB] of 30 May 2000
- [FeynArts-2.1.tar.gz](#) [432 kB] of 27 Mar 1996
- [FeynArts-1.2.tar.gz](#) [279 kB] of 1 Dec 1997

Requirements:

- Mathematica 3 or above,
- with Mathematica versions before 5.0, a Java VM and the J/Link package are needed for the topology editor. Both ingredients can be obtained free of charge from <http://www.wolfram.com/solutions/mathlink/jlink> (J/Link) and <https://www.java.com> (Java). Note that many systems (e.g. Windows) have a Java VM pre-installed. Follow the instructions that come with J/Link for installation on the various platforms.

To install FeynArts, simply unpack the archive **FeynArts-n.m.tar.gz**.

More detailed instructions are given in the manual contained in the FeynArts distribution.

You can obtain [the manual of the current version here](#).

2

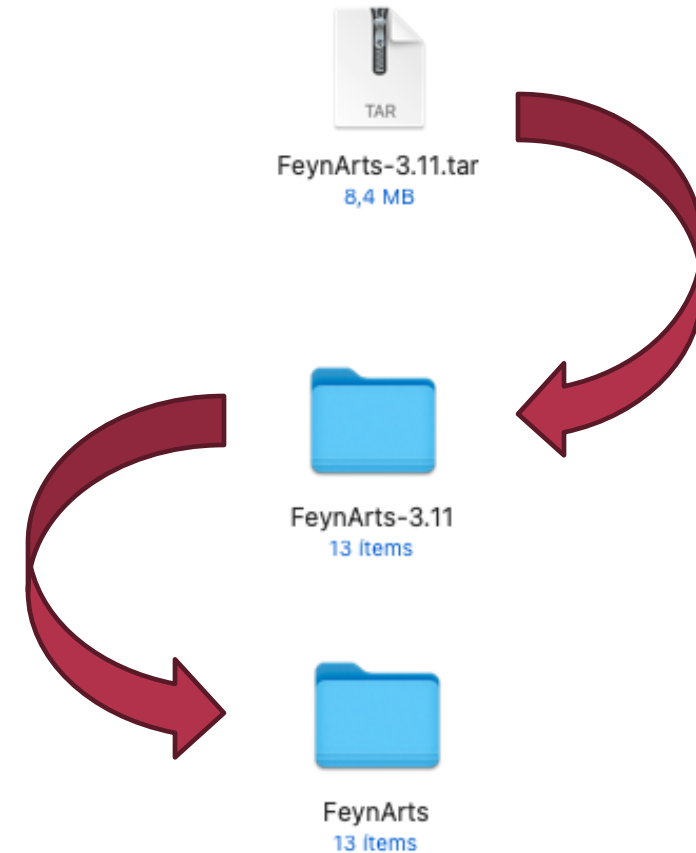
1. Download the FeynArts package

For later:

2. Download the Manual

FEYNARTS. INSTALLATION

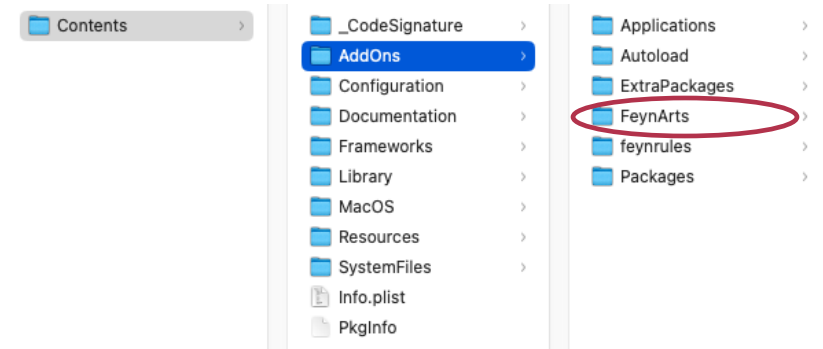
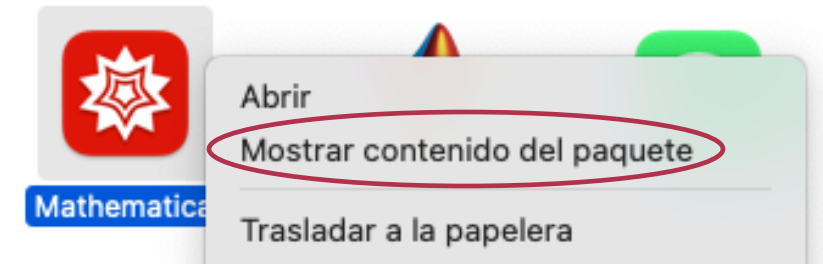
- Unzip the **FeynArts-3.11.tar** file
- Rename the new folder to **FeynArts**
(You can choose another one actually later)



FEYNARTS. INSTALLATION

- Copy the **FeynArts** folder
- Access the contents of your **Mathematica** installation
- Go to **Contents** > **AddOns** and paste it there

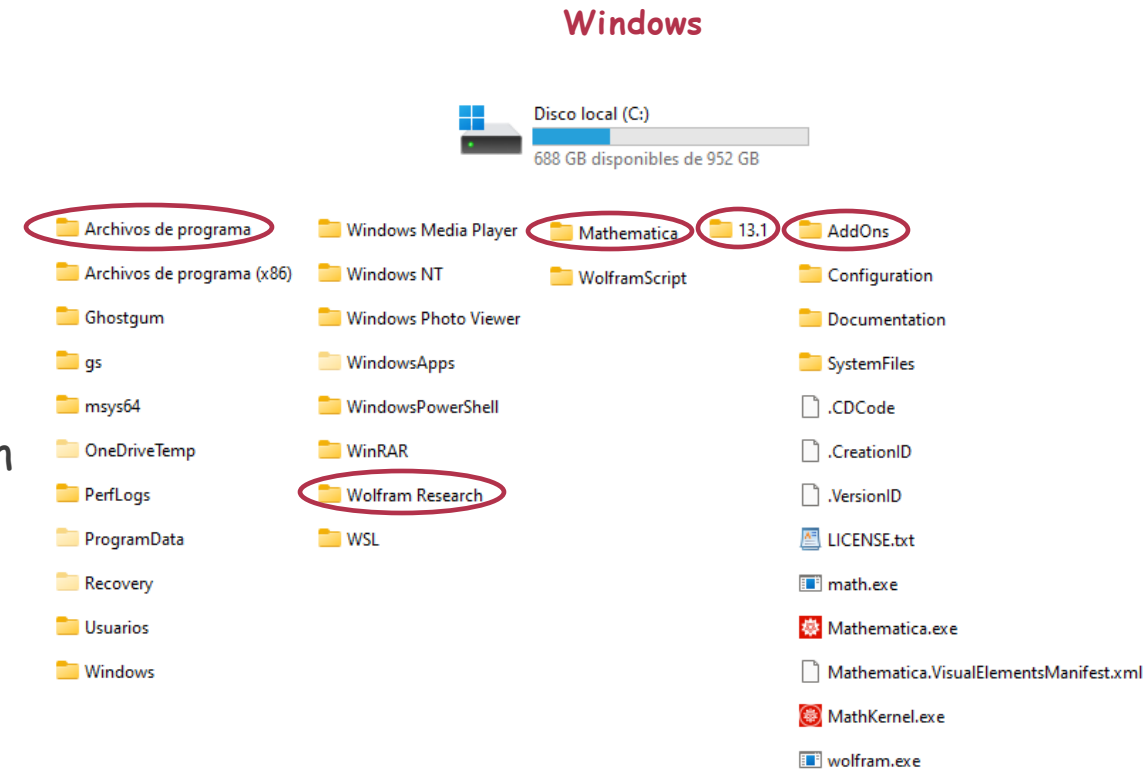
MacOS



DONE!

FEYNARTS. INSTALLATION

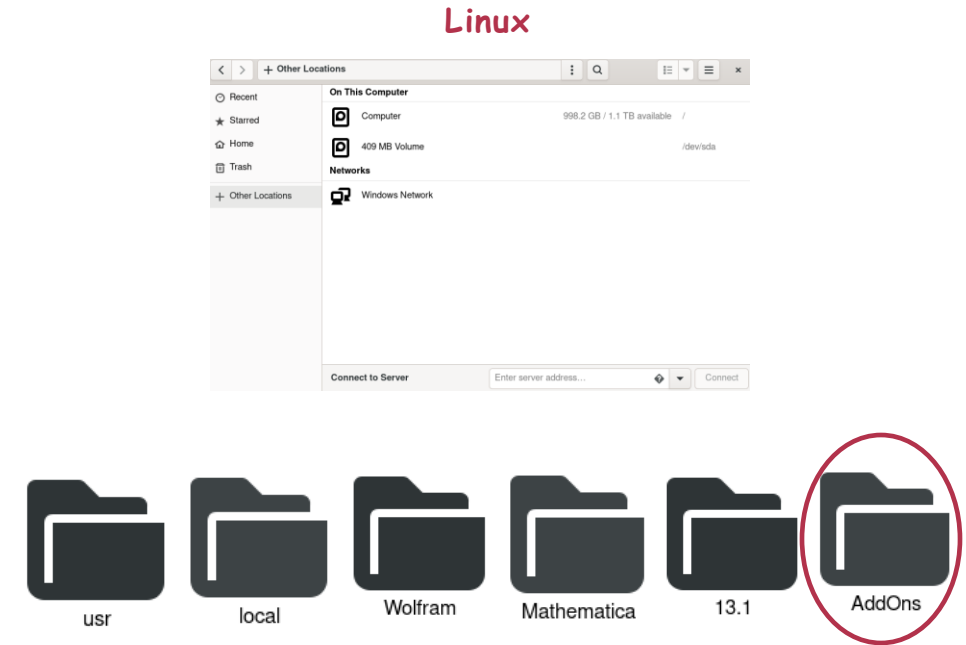
- Copy the **FeynArts** folder
- Access the contents of your **Mathematica** installation
- Go to **Contents** > **AddOns** and paste it there



DONE!

FEYNRARTS. INSTALLATION

- Copy the **FeynArts** folder
- Access the contents of your **Mathematica** installation
- Go to **Contents > AddOns** and paste it there



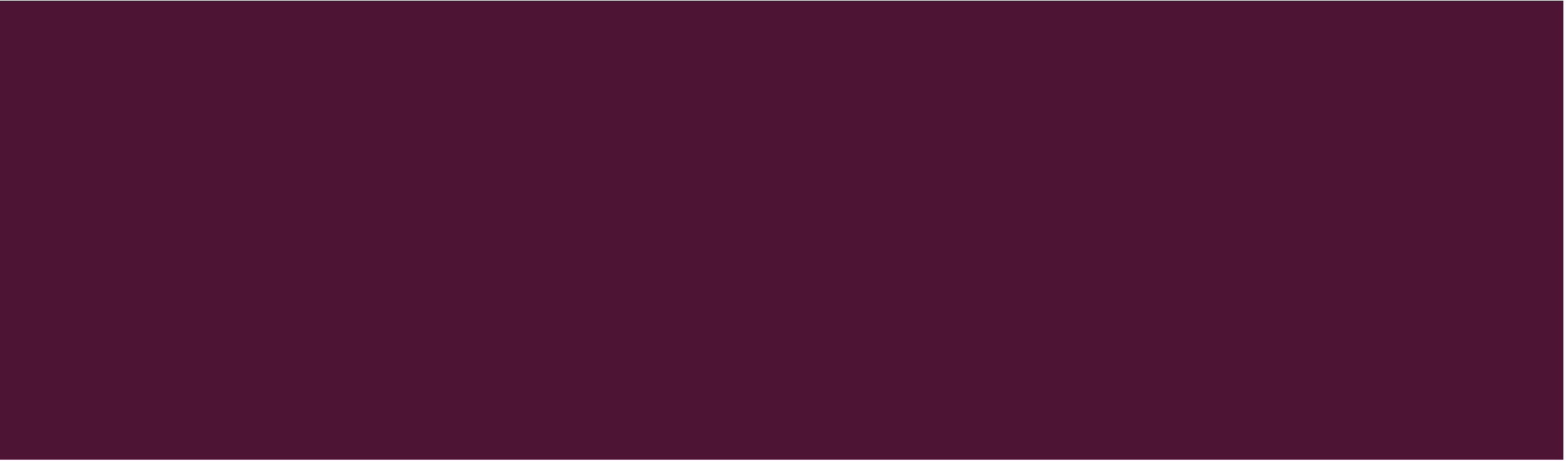
DONE!



FEYNARTS

LAUNCH

[MACOS](#) - [WINDOWS](#) - [LINUX](#)



FEYNARTS. LAUNCH

MacOS

- Open a new **Mathematica** notebook

1. Write and execute the command

```
Quit[];
```

This will terminate the kernel, losing any definitions previously made

It is needed because FeynArts needs to be executed clean

```
In[ ]: Quit[]; 1
[quit kernel]

2 In[1]: $FeynArtsPath = SetDirectory["/Applications/Mathematica.app/Contents/AddOns/FeynArts"];
[establece directorio]

In[2]: << FeynArts` ; 3

FeynArts 3.11 (25 Mar 2022)
by Hagen Eck, Sepp Kueblbeck, and Thomas Hahn
```

FEYNARTS. LAUNCH

MacOS

2. Write and execute the command

```
$FeynArtsPath = SetDirectory[".../FeynArts"];
```

This will tell the notebook where to look for the FeynArts installation

```
In[ ]: Quit[]; 1
[deten node]

2 In[1]: $FeynArtsPath = SetDirectory["/Applications/Mathematica.app/Contents/AddOns/FeynArts"];
[establece directorio]

In[2]: << FeynArts` ; 3

FeynArts 3.11 (25 Mar 2022)
by Hagen Eck, Sepp Kueblbeck, and Thomas Hahn
```

FEYNARTS. LAUNCH

MacOS

3. Write and execute the command

```
<< FeynArts`;
```

This will launch FeynArts

```
In[ ]: Quit[]; 1
[deten node]

2 In[1]: $FeynArtsPath = SetDirectory["/Applications/Mathematica.app/Contents/AddOns/FeynArts"];
[establece directorio]

In[2]: << FeynArts`; 3

FeynArts 3.11 (25 Mar 2022)
by Hagen Eck, Sepp Kueblbeck, and Thomas Hahn
```

DONE!

FEYNARTS. LAUNCH

Windows

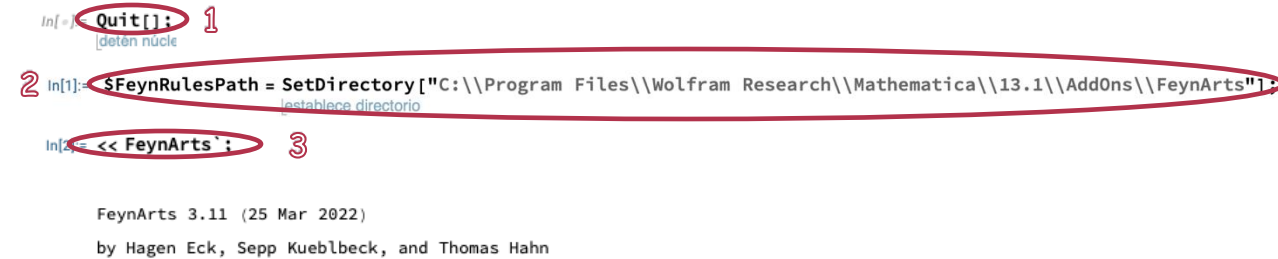
- Open a new **Mathematica** notebook

1. Write and execute the command

```
Quit[];
```

This will terminate the kernel, losing any definitions previously made

It is needed because FeynArts needs to be executed clean



The screenshot shows a Mathematica notebook with three input cells, each with a red circle and a number indicating a step:

- 1. `Quit[];` (with a tooltip that says "beenden nucke")
- 2. `$FeynRulesPath = SetDirectory["C:\\Program Files\\Wolfram Research\\Mathematica\\13.1\\AddOns\\FeynArts\\1"];` (with a tooltip that says "festlegen directorio")
- 3. `<< FeynArts;`

Below the input cells, the output of the third cell is displayed:

```
FeynArts 3.11 (25 Mar 2022)  
by Hagen Eck, Sepp Kueblbeck, and Thomas Hahn
```

FEYNARTS. LAUNCH

Windows

2. Write and execute the command

```
$FeynArtsPath = SetDirectory[".../FeynArts"];
```

This will tell the notebook where to look for the FeynArts installation

```
In[ ]:= Quit[]; 1
[deten nücke]

2 In[1]:= $FeynRulesPath = SetDirectory["C:\\Program Files\\Wolfram Research\\Mathematica\\13.1\\AddOns\\FeynArts"];
[establene directorio]

In[ ]:= << FeynArts; 3

FeynArts 3.11 (25 Mar 2022)
by Hagen Eck, Sepp Kueblbeck, and Thomas Hahn
```

FEYNARTS. LAUNCH

Windows

3. Write and execute the command

```
<< FeynArts`;
```

This will launch FeynArts

```
In[ ]:= Quit[]; 1
[deten nücke]

2 In[1]:= $FeynRulesPath = SetDirectory["C:\\Program Files\\Wolfram Research\\Mathematica\\13.1\\AddOns\\FeynArts"];
[establene directorio]

In[ ]:= << FeynArts`; 3

FeynArts 3.11 (25 Mar 2022)
by Hagen Eck, Sepp Kueblbeck, and Thomas Hahn
```

DONE!

FEYNARTS. LAUNCH

Linux

- Open a new **Mathematica** notebook

1. Write and execute the command

```
Quit[];
```

This will terminate the kernel, losing any definitions previously made

It is needed because FeynArts needs to be executed clean

```
In[ ]: Quit[]; 1
[deten. núcleo]

2 In[1]: $FeynRulesPath = SetDirectory["/usr/local/Wolfram/Mathematica/13.1/AddOns/FeynArts"]
[establece directorio]

In[2]: << FeynArts` ; 3

FeynArts 3.11 (25 Mar 2022)
by Hagen Eck, Sepp Kueblbeck, and Thomas Hahn
```

FEYNARTS. LAUNCH

Linux

2. Write and execute the command

```
$FeynArtsPath = SetDirectory[".../FeynArts"];
```

This will tell the notebook where to look for the FeynArts installation

```
In[ ]: Quit[]; 1
[deten. n6c1e]

2 In[1]: $FeynRulesPath = SetDirectory["/usr/local/Wolfram/Mathematica/13.1/AddOns/FeynArts"]
[establece directorio]

In[2]: << FeynArts` ; 3

FeynArts 3.11 (25 Mar 2022)
by Hagen Eck, Sepp Kueblbeck, and Thomas Hahn
```

FEYNARTS. LAUNCH

Linux

3. Write and execute the command

```
<< FeynArts`;
```

This will launch FeynArts

```
In[ ]:= Quit[]; 1
[deten: n6c1e]

2 In[1]:= $FeynRulesPath = SetDirectory["/usr/local/Wolfram/Mathematica/13.1/AddOns/FeynArts"]
[establece directorio]

In[2]:= << FeynArts`; 3

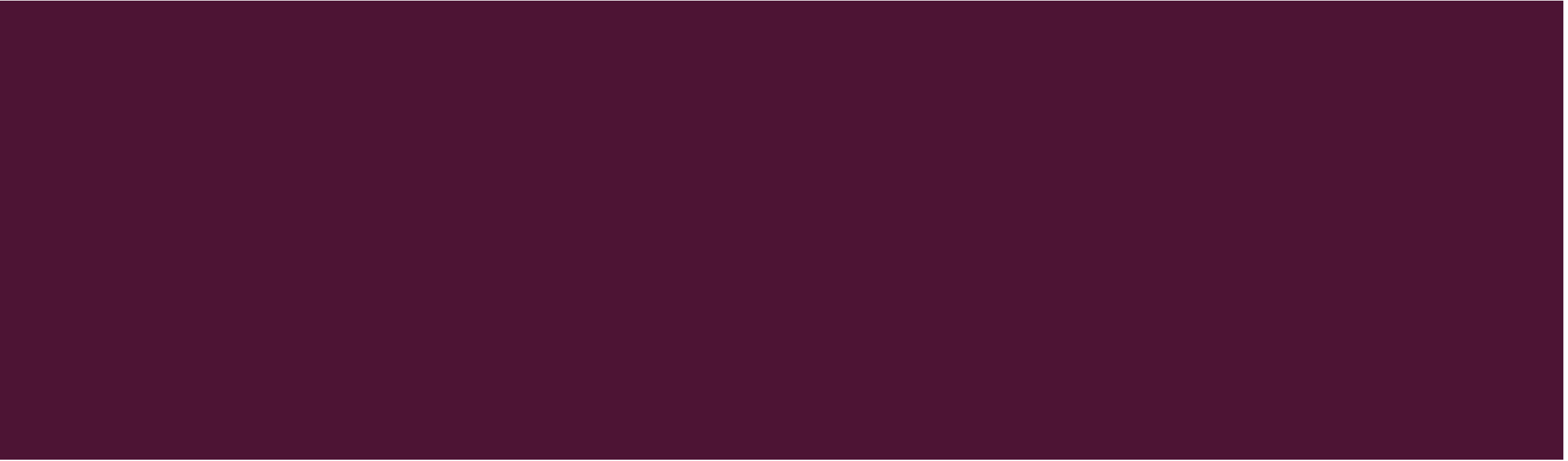
FeynArts 3.11 (25 Mar 2022)
by Hagen Eck, Sepp Kueblbeck, and Thomas Hahn
```

DONE!



FEYNCALC

INSTALLATION



FEYNCALC. INSTALLATION

- Access the web:

<https://feyncalc.github.io>

FEYNCALC. INSTALLATION

FeynCalc

Tools and Tables for Quantum Field Theory Calculations

Install »

Example gallery »

Description

FeynCalc is a [Mathematica](#) package for symbolic evaluation of Feynman diagrams and algebraic calculations in quantum field theory and elementary particle physics.

Some features of FeynCalc are:

- Multiloop topology identification and minimization
- Passarino-Veltman reduction of one-loop amplitudes to standard scalar integrals
- Tools for frequently occurring tasks like Lorentz index contraction, color factor calculation, Dirac matrix manipulation and traces, etc.
- Tensor and Dirac algebra manipulations (including traces) in 4 or D dimensions
- Generation of Feynman rules from a lagrangian
- Tools for non-commutative algebra
- SU(N) algebra
- Tables of integrals, convolutions and Feynman rules
- Special convolution, Mellin transform and other integral tables
- Tools for calculating 2-loop propagator-type diagrams
- FORM and FORTRAN code generation
- Translation to and from FORM

Installation

For installation instructions please follow the steps outlined in the [manual](#).¹ The impatient can simply type

```
Import["https://raw.githubusercontent.com/FeynCalc/feyncalc/master/install.m"];  
  
InstallFeynCalc[]
```

in a *Mathematica* session.

The code may also be viewed and downloaded from our [GitHub repository](#).

FeynCalc is covered by the GNU General Public License 3.

Copyright © 1990-2024 Rolf Mertig

Copyright © 1997-2024 Frederik Orellana,

Copyright © 2014-2024 Vladyslav Shtabovenko

FeynCalc is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

FeynCalc is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with FeynCalc. If not, see [here](#).

For later:

1. Access the Manual

2. Copy the FeynCalc installation commands

FEYN CALC. INSTALLATION

- Open a new **Mathematica** notebook
- Paste the installation commands
- Execute the code

```
In[1]:= Import["https://raw.githubusercontent.com/FeynCalc/feyncalc/master/install.m"];  
[importa
```

```
InstallFeynCalc[]
```

Welcome to the automatic FeynCalc installer brought to you by the FeynCalc developer team!

- To install the current stable version of FeynCalc (recommended for productive use), please evaluate

```
InstallFeynCalc[]
```

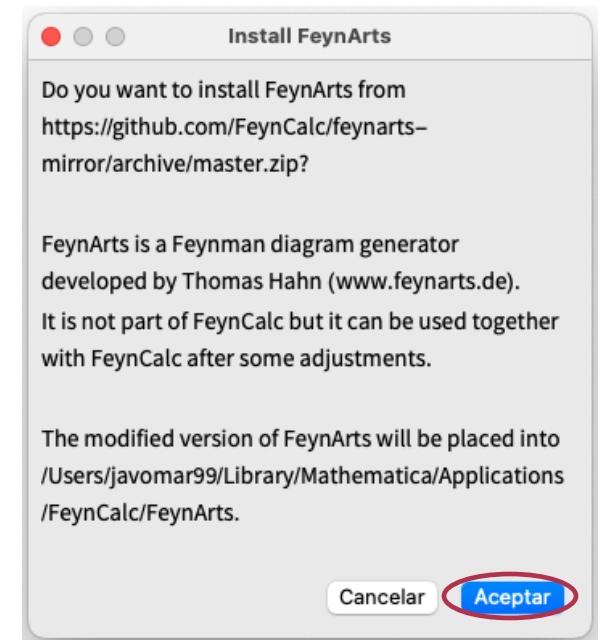
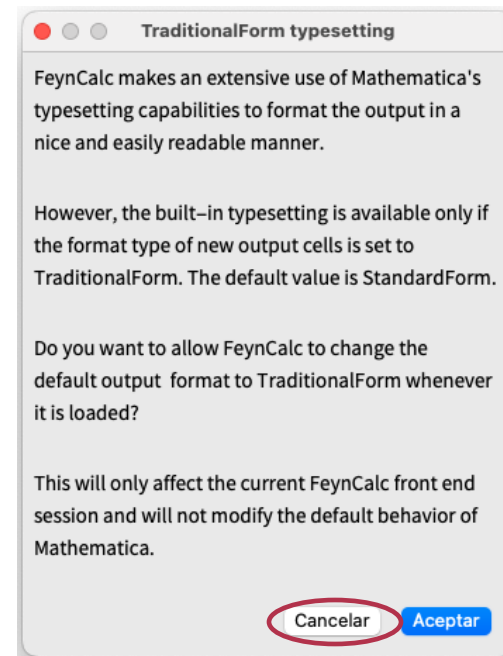
FEYN CALC. INSTALLATION

- Press **Cancel** for the first prompt

We will keep using StandardForm without problem

- Press **Accept** for the second prompt

This will install a compatible version of FeynArts ready to use within the same FeynCalc session

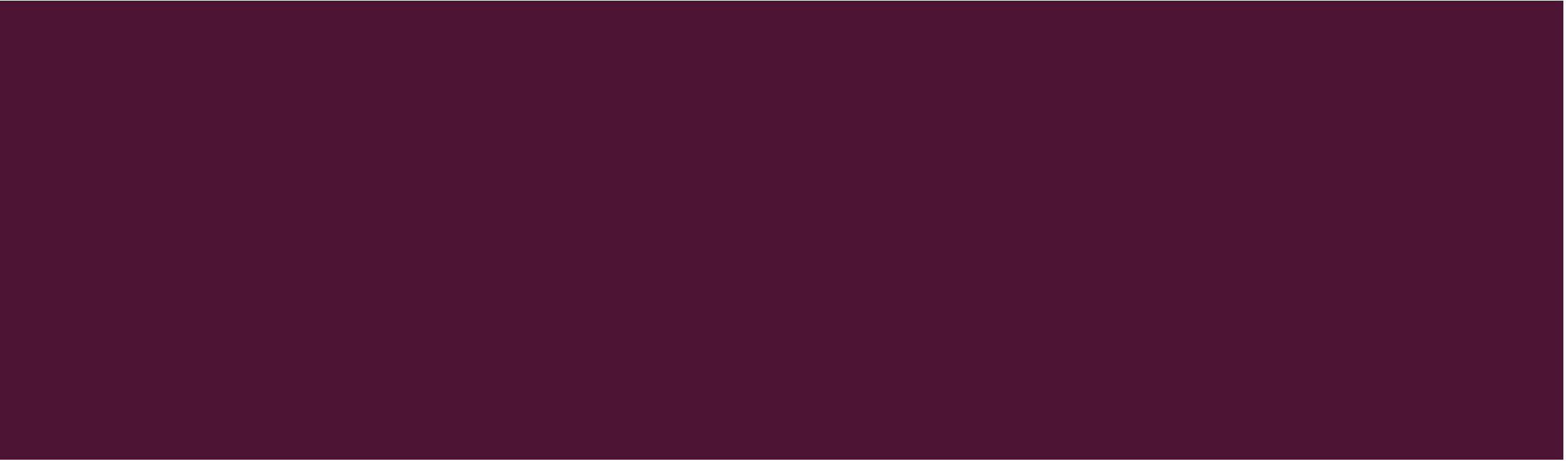


DONE!



FEYNCALC

LAUNCH



FEYNCALC. LAUNCH

- Open a new **Mathematica** notebook

1. Write and execute the command

```
Quit[];
```

This will terminate the kernel, losing any definitions previously made
It is needed because FeynCalc needs to be executed clean

```
In[ ]:= Quit[]; 1
Out[ ]:=
In[ ]:= $LoadAddOns = {"FeynArts"}; 2
Get["FeynCalc`"]
Out[ ]:=
In[ ]:= $FAVerbose = 0; 3
```

FeynCalc 10.0.0 (stable version). For help, use the [online documentation](#), visit the [forum](#) and have a look at the supplied [examples](#).

If you use FeynCalc in your research, please evaluate FeynCalcHowToCite[] to learn how to cite this software.

Please keep in mind that the proper academic attribution of our work is crucial to ensure the future development of this package!

FeynArts 3.11 (25 Mar 2022) patched for use with FeynCalc, for documentation see the [manual](#) or visit www.feynarts.de.

If you use FeynArts in your research, please cite

• T. Hahn, Comput. Phys. Commun., 140, 418–431, 2001, arXiv:hep-ph/0012260

FEYNCALC. LAUNCH

2. Write and execute the commands

```
$LoadAddOns = {"FeynArts"};
```

This will load FeynArts like and AddOn for FeynCalc

```
Get["FeynCalc`"]
```

This will launch FeynCalc (same as `<<FeynCalc``)

```
In[ ]:= Quit[]; 1
Out[ ]:=
In[ ]:= $LoadAddOns = {"FeynArts"}; 2
Get["FeynCalc`"]
Out[ ]:=
In[ ]:= $FAVerbose = 0; 3
```

FeynCalc 10.0.0 (stable version). For help, use the [online documentation](#), visit the [forum](#) and have a look at the supplied [examples](#).

If you use FeynCalc in your research, please evaluate `FeynCalcHowToCite[]` to learn how to cite this software.

Please keep in mind that the proper academic attribution of our work is crucial to ensure the future development of this package!

FeynArts 3.11 (25 Mar 2022) patched for use with FeynCalc, for documentation see the [manual](#) or visit www.feynarts.de.

If you use FeynArts in your research, please cite

• T. Hahn, Comput. Phys. Commun., 140, 418–431, 2001, arXiv:hep-ph/0012260

FEYNCALC. LAUNCH

3. Write and execute the command

```
$FAVerbose = 0;
```

This will delete the progress messages of FeynArts

```
In[ ]:= Quit[]; 1
Out[ ]:=
In[ ]:= $LoadAddOns = {"FeynArts"}; 2
Get["FeynCalc`"]
recibe
$FAVerbose = 0; 3
```

FeynCalc 10.0.0 (stable version). For help, use the [online documentation](#), visit the [forum](#) and have a look at the supplied [examples](#).

If you use FeynCalc in your research, please evaluate `FeynCalcHowToCite[]` to learn how to cite this software.

Please keep in mind that the proper academic attribution of our work is crucial to ensure the future development of this package!

FeynArts 3.11 (25 Mar 2022) patched for use with FeynCalc, for documentation see the [manual](#) or visit www.feynarts.de.

If you use FeynArts in your research, please cite

• T. Hahn, Comput. Phys. Commun., 140, 418–431, 2001, arXiv:hep-ph/0012260

DONE!



You are now ready to start using
FeynRules