

哈尔滨工程大学

College of Nuclear Science and Technology

FLUKA seminar

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Course: Radiation protection and environmental protection

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Class 01: Registering and downloading packages.

In this first part we are going to install the required programs and software for running FLUKA code on Windows operative system. We are going also to register in the adequate platforms for legally using the codes.

Requirements:

- Windows 10 with at least 2 gigabites memory ram and at least 15 gigabites hard disk.
- An institutional email account (@hrbeu.edu.cn). If you haven't created an email account belonging to HEU. You can follow the next short procedure: Go to <https://mail.hrbeu.edu.cn/>

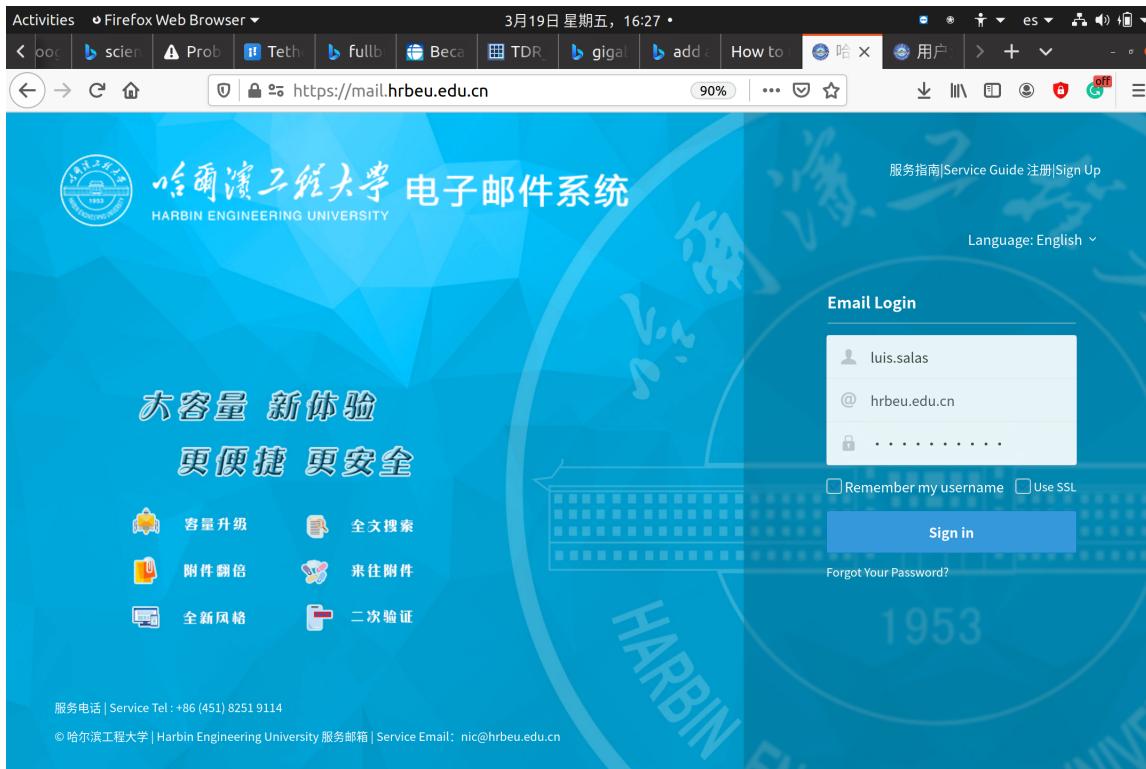


Figure 1: Figure

Click in "sign up" and fill out all the required information. You could use Google Chrome to translate the Chinese characters if it is desired.

The screenshot shows a web browser window with the URL <https://mail.hrbeu.edu.cn/register/register.jsp>. The page title is "欢迎来到注册页面". It features two sections: "个人信息" (Personal Information) and "账号信息" (Account Information). In the "个人信息" section, there are three input fields: "身份证号" (ID Card Number), "学工号" (Student ID Number), and "邮箱" (Email). In the "账号信息" section, there are six input fields: "账号" (Account), "密码" (Password), "确认密码" (Confirm Password), "密码提示问题" (Password Hint Question), "密码提示答案" (Password Hint Answer), and "验证码" (Captcha). The "账号" field contains "luis.salas" and has a tooltip "@ hrbeu.edu.cn 3-20个字符,必须以小写字母、数字或者下划线开头". The "密码" field contains "*****" and has a tooltip "8-16个字符,区分大小写". The "验证码" field contains "64V AJ B" and has a tooltip "看不清楚,换一个". A "注册" (Register) button is located at the bottom of the form.

Figure 2: Figure

Now we will proceed to download the required programs for running FLUKA. Keep these programs in your computer because we will install them together in our first class.

- Let's start downloading VirtualBox for Windows. Go to <https://www.virtualbox.org/wiki/Downloads> and download it clicking the "Windows hosts" link.

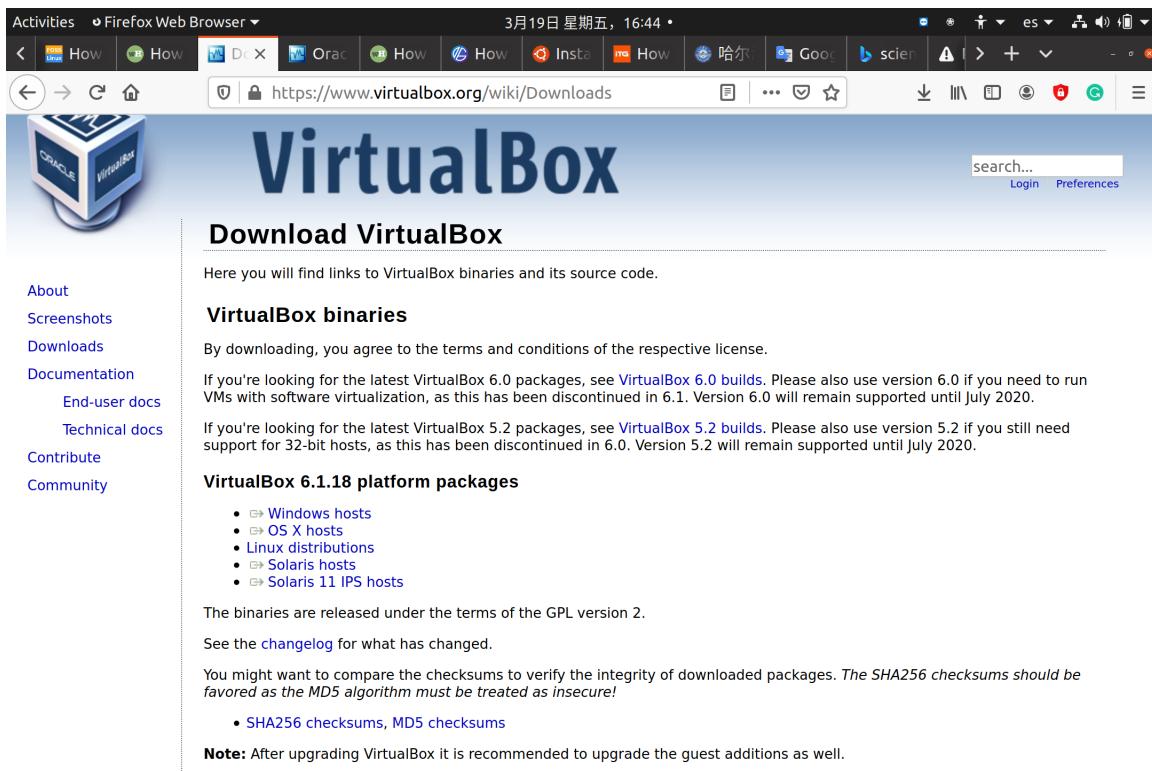
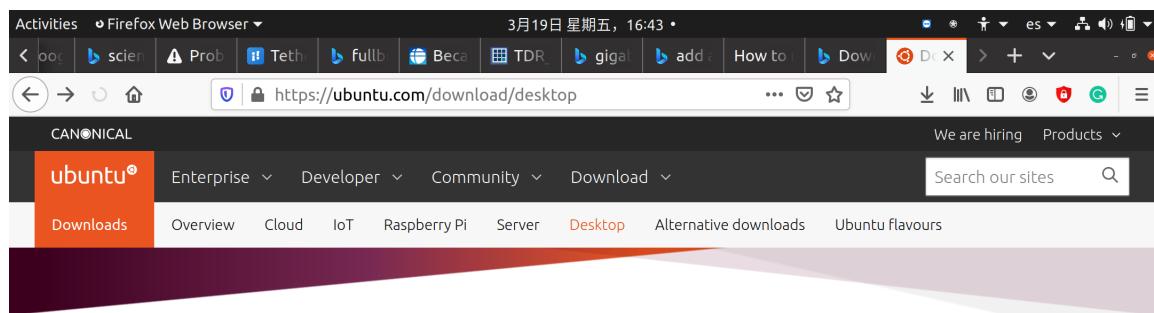


Figure 3: Figure

- Now we will move to getting the latest stable version of Ubuntu. Go to <https://ubuntu.com/download/desktop> and press download.



Download Ubuntu Desktop

A screenshot of the Ubuntu 20.04.2.0 LTS download page. The title 'Ubuntu 20.04.2.0 LTS' is at the top. Below it, a paragraph explains that it's the latest LTS version, supported until April 2025. A large green 'Download' button is on the right. Below the main content, there's a section for 'Recommended system requirements' and a note about other versions of Ubuntu Desktop.

Figure 4: Figure

After these operations, we need to apply in a proper way for getting the license for using the desired code. The requirement so far is having the institutional account.

- Got to the institutional FLUKA CERN website and press create an account <https://fluka.cern/download/registration>.

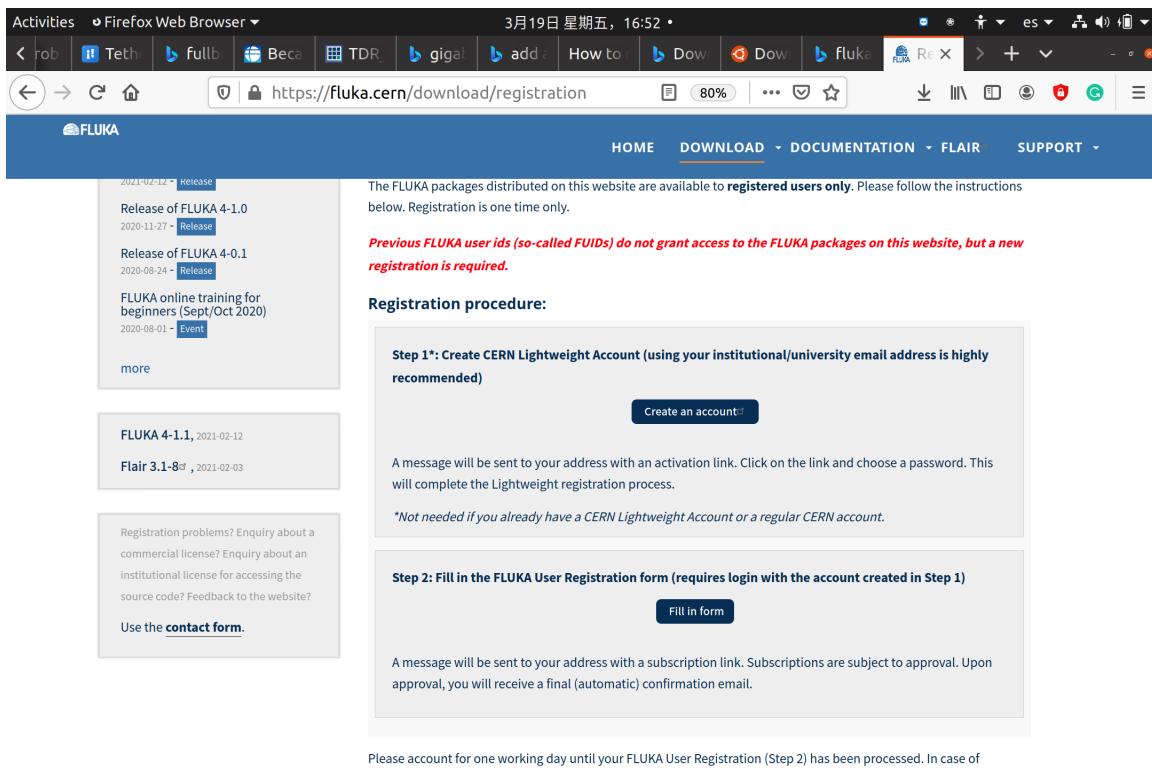


Figure 5: Figure

- Now we fill out the relevant information, namely personal information. In the fields names you fill out the spots as such. In phone number you current phone number with the indicative before it, for example if you are in China +86. In organization you jot down Harbin Engineering University, in Department you write down College of Nuclear Science and Technology. And finally you accept the two other spots. The next figure is as reference with a real case. Press register.

The screenshot shows a Firefox browser window with the address bar displaying <https://account.cern.ch/account/Externals/RegisterAccount.aspx>. The page title is "Register a new CERN lightweight account". The left sidebar has sections for "Lightweight Accounts" (with icons of two people) and "Acceptable Use Policy" (with a question mark icon). The main form area has tabs for "Account Information" and "Acceptable Use Policy". The "Account Information" tab is active, showing fields for Email (wexuan@hrbeu.edu.cn), First Name (Wenxuan), Last Name (Wang), Phone (+8618645149601), Company/Organization (Harbin Engineering University), and Department/Division (College of Nuclear Science and Tech). A reCAPTCHA field contains a checkmark and the text "I'm not a robot". Below the form, a note says "I have read and agree to the conditions below" with a checked checkbox and a mandatory field note. A "Register" button is at the bottom.

Figure 6: Figure

- An email for confirmation will be sent to your HEU account <https://mail.hrbeu.edu.cn/>. You have to open your email, go to the Inbox and open the link CERN has sent you. After clicking that link you will be able to see something like this screenshot. After pressing you will be able to establish a password.

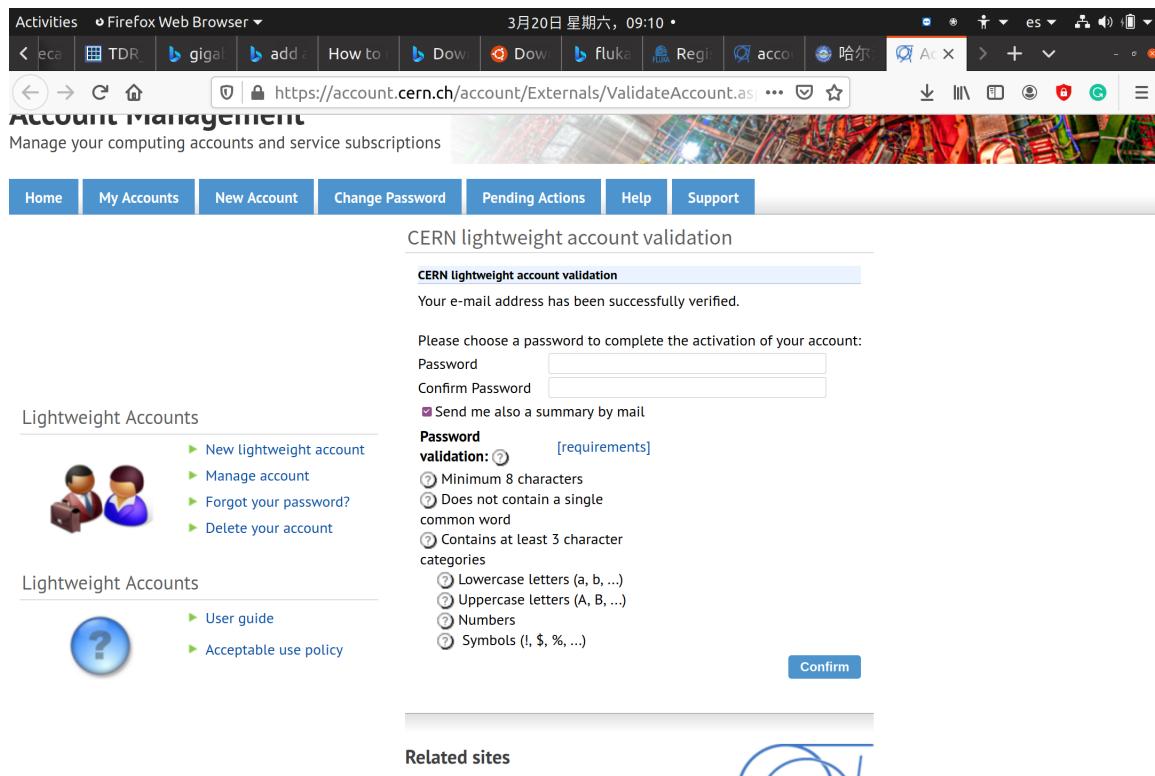


Figure 7: Figure

- For the registration process we need to fill out carefully all the fields available for such. Then go back to the website shown in Figure 5, there click in Fill in form in order to apply for the license.

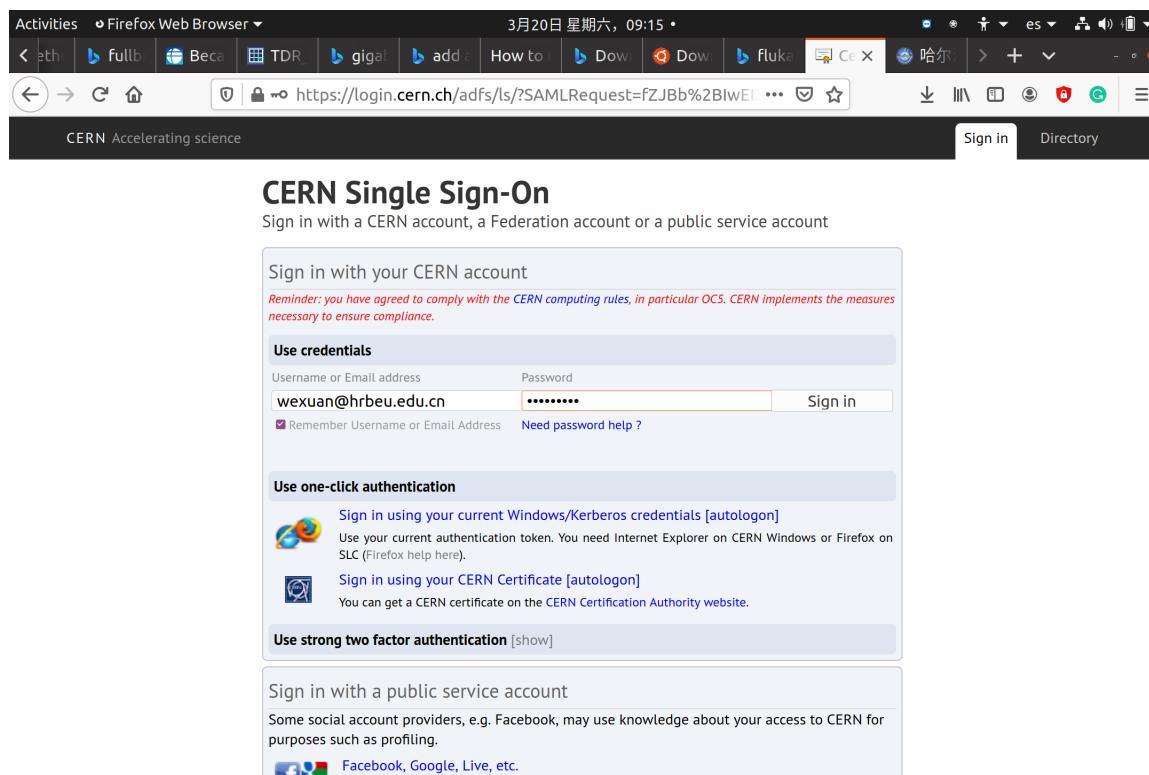


Figure 8: Figure

Fill in all the spots accordingly, namely put your name as the same way as you did when creating the account. In affiliation please select "I am affiliated with a university not holding an institutional FLUKA license". Fill out with the name of our current university, and in the purpose you could put radiation protection. Accept the reference terms and click "send message". You can take a glance to the following images as reference.

The screenshot shows the FLUKA registration page. On the left, there's a sidebar with news items and links to FLUKA 4-1.1 and Flair 3.1-8. The main form has sections for Personal Information (First name: Wenxuan, Last name: Wang), Contact (Email: wenxuan@hrbeu.edu.cn), and Affiliation. It asks to select an affiliation type (NOT holding an institutional license) and provides terms and conditions for download. A note at the bottom says if an institution obtains a license, registration will be free.

Figure 9: Figure

This screenshot shows a more detailed version of the registration form. It includes fields for Institute/university (Harbin Engineering University) and Country where institute/university is located (China). It also includes a Single User Licence Agreement checkbox, an Area of application dropdown (Radiation protection), and a Data Privacy Protection Policy checkbox. A note at the bottom states that if you unsubscribe later, you can do so via the contact form.

Figure 10: Figure

After that you will able to see an screen as the follow. According to them, now the process can last til one day.

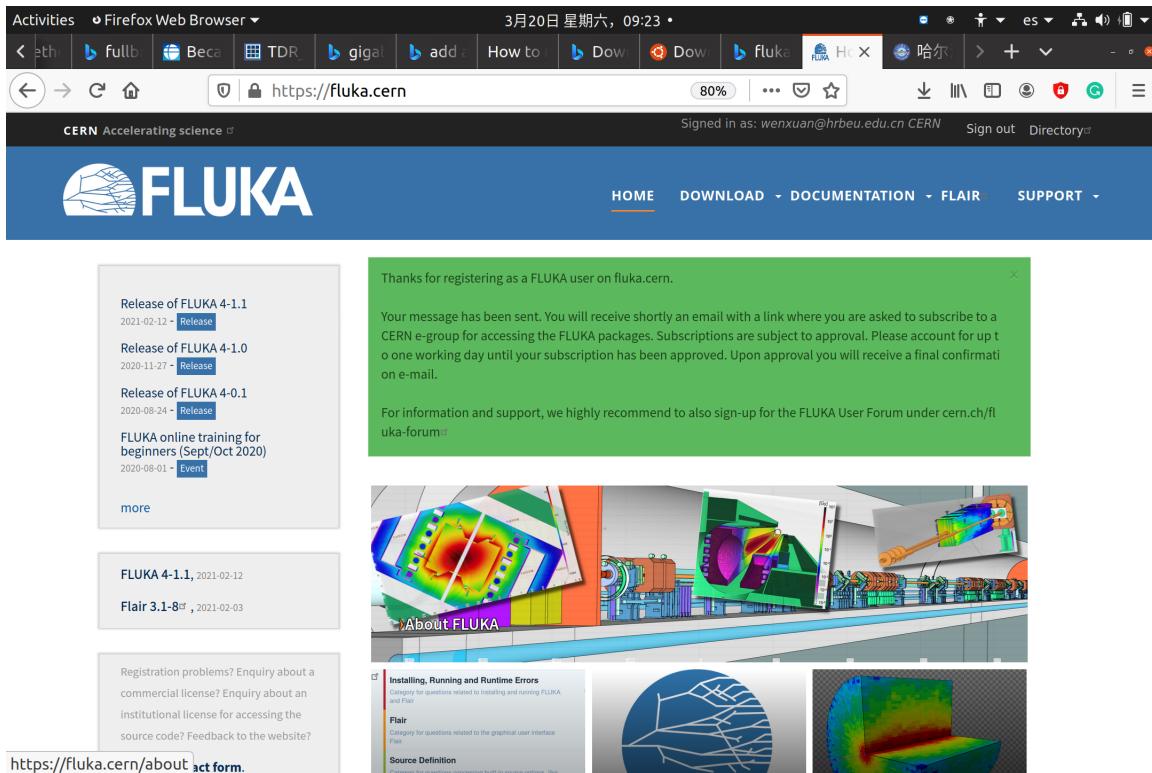


Figure 11: Figure

- After the approval you can check your inbox seeing an email like this.

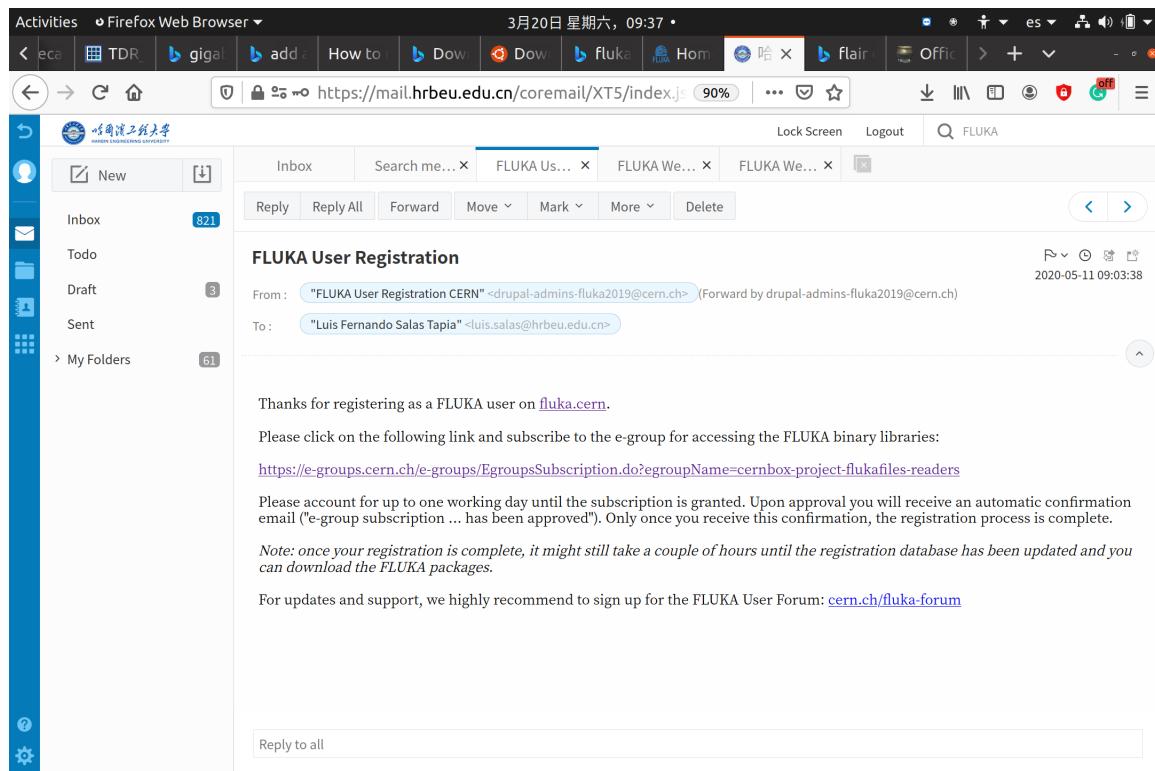


Figure 12: Figure

You have to open that link and later press "Add as a member". Therefore, you know are able to download the FLUKA binaries packages.

- Go back to <https://fluka.cern/>, press "Sign in" and introduce you information access information.

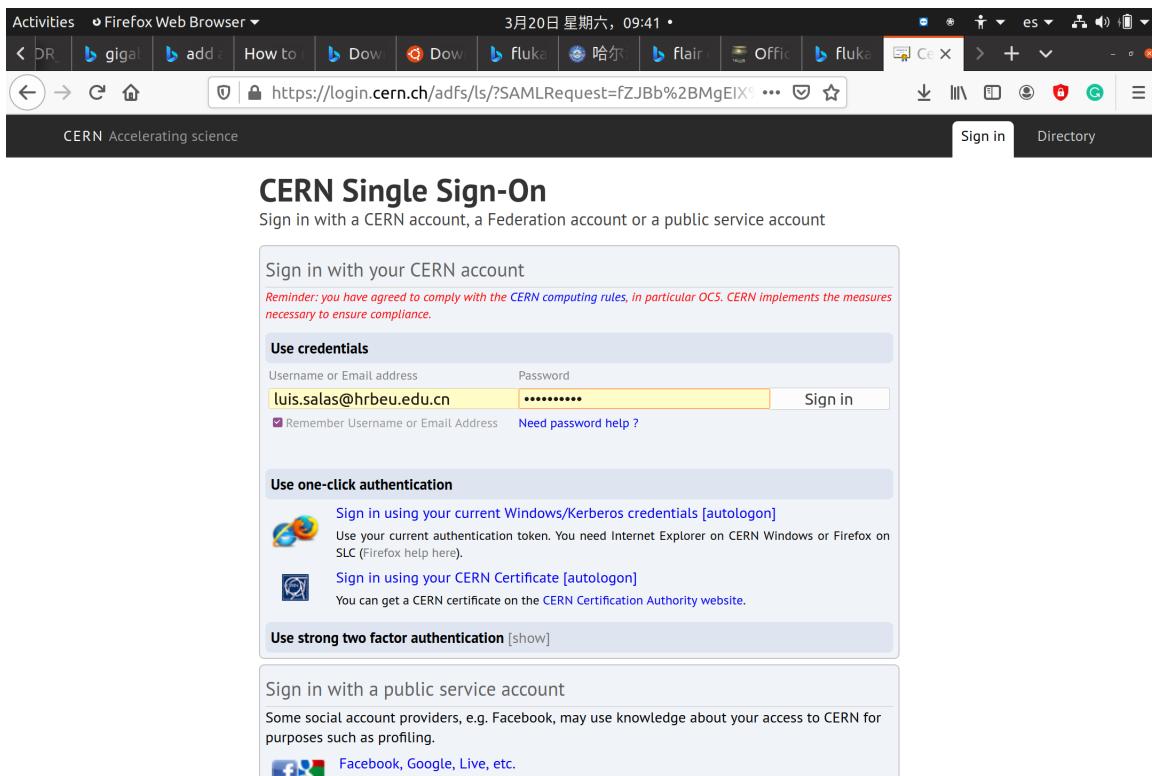


Figure 13: Figure

As soon as you have signed in, go to the Download tab, then Download the latest FLUKA release, and in this part we are going to press download on "gfortran 9, 64 bits (.deb)", website at this point <https://fluka.cern/download/latest-fluka-release>, the file will start to download and you have until it finishes. Keep this file on your computer for further installation.

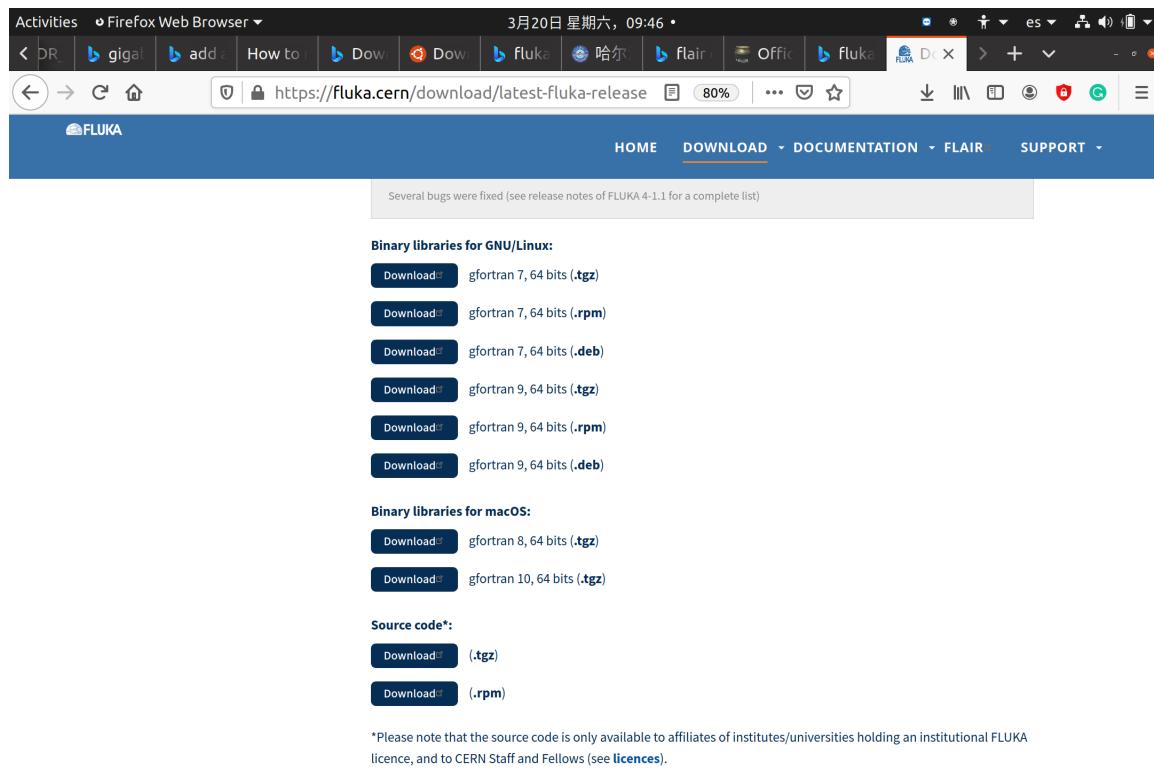
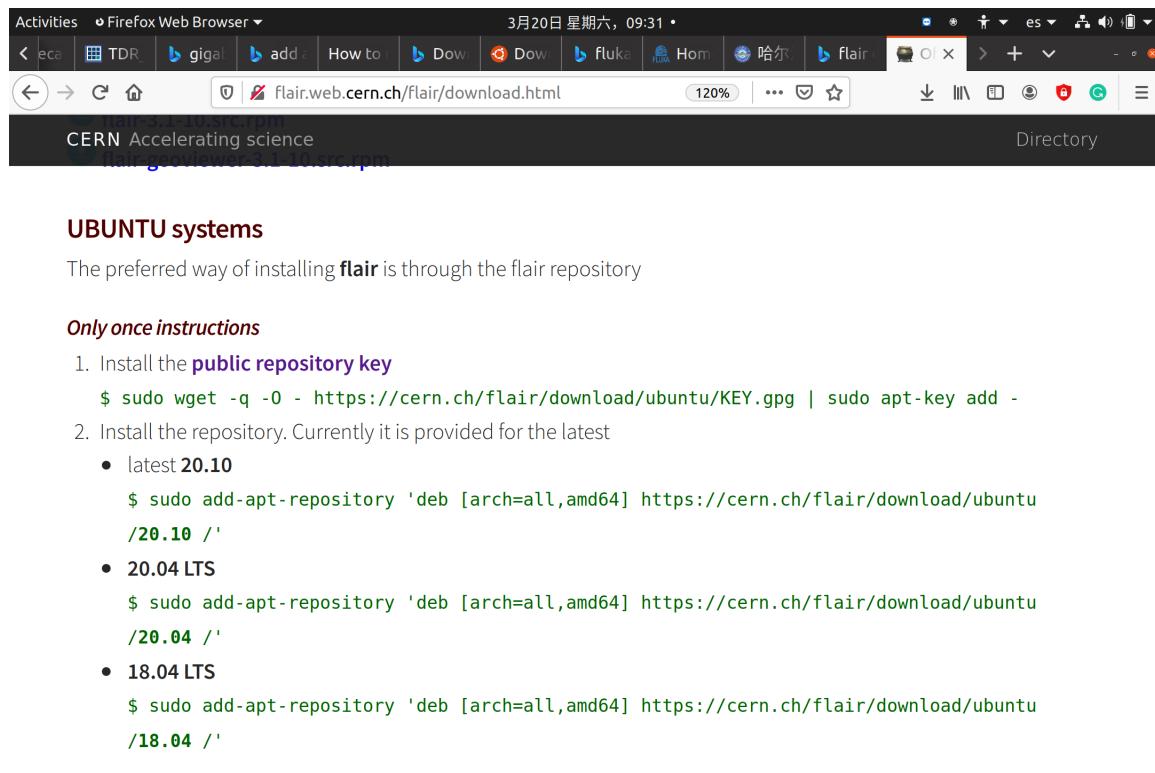


Figure 14: Figure

For the installation of "flair" we can refer to the website directly <http://flair.web.cern.ch/flair/download.html>. As an "open source code" we can install on our Ubuntu system as soon as it is installed on the virtual machine if that is the case. The instructions for a Ubuntu system is in the same website link. This will be the last step after fully installing all the other packages and the operative system.



UBUNTU systems

The preferred way of installing **flair** is through the **flair** repository

Only once instructions

1. Install the **public repository key**

```
$ sudo wget -q -O - https://cern.ch/flair/download/ubuntu/KEY.gpg | sudo apt-key add -
```

2. Install the repository. Currently it is provided for the latest

- latest **20.10**

```
$ sudo add-apt-repository 'deb [arch=all,amd64] https://cern.ch/flair/download/ubuntu  
/20.10 /'
```

- **20.04 LTS**

```
$ sudo add-apt-repository 'deb [arch=all,amd64] https://cern.ch/flair/download/ubuntu  
/20.04 /'
```

- **18.04 LTS**

```
$ sudo add-apt-repository 'deb [arch=all,amd64] https://cern.ch/flair/download/ubuntu  
/18.04 /'
```

Figure 15: Figure