EditEPS Helper

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October 1, 2023

Introduction

EditEPS Helper is a PyQt5 application whose purpose is to help to use the package editeps. Editeps is a LaTeX package whose purpose is to add LaTeX elements in an EPS file through LaTeX. It is a package that I created many years ago.

To use editeps with an EPS file, we need to know the bounding box of the EPS file and give a scaling factor that determines the size of the LaTeX elements that we want to introduce. If we want the LaTeX elements introduced in the EPS file to have the same size as in the text, it is necessary to calculate the scaling factor that editeps uses.

EditEPS Helper reads the bounding box of the selected EPS file and calculates the scaling factor, that way the LaTeX elements inside the EPS file and in the text are the same size. It also gives us an idea of the page, text, and EPS image relations.

Installation

You need Python 3.9. Download the project folder `EditEPSHelper`, create a virtual environment with `pip` and `requirements.txt`, and run the program running the file `EditEPSHelper.pyw` with Python in that virtual environment.

For the users of Windows 10 and newer, the application is packaged with PyInstaller in the folder `EditEPSHelper-win`. To install the application, copy the `EditEPSHelper-win` folder anywhere and double-click on `EditEPSHelper.exe`.

To uninstall the application, delete the folders of the project and the virtual environment, or `EditEPSHelper-win`. If you want and if it exists, you can also delete the Registry key

`HKET_CURRENT_USER/SOFTWARE/ItacaSoftware/EditEPSHelper`

Or delete the key

`HKET_CURRENT_USER/SOFTWARE/ItacaSoftware`

if `EditEPSHelper` is the only subkey of `ItacaSoftware`.

An example

The following four figures correspond to an example of the use of the application with the EPS file `ArnoldTongues2.eps`.

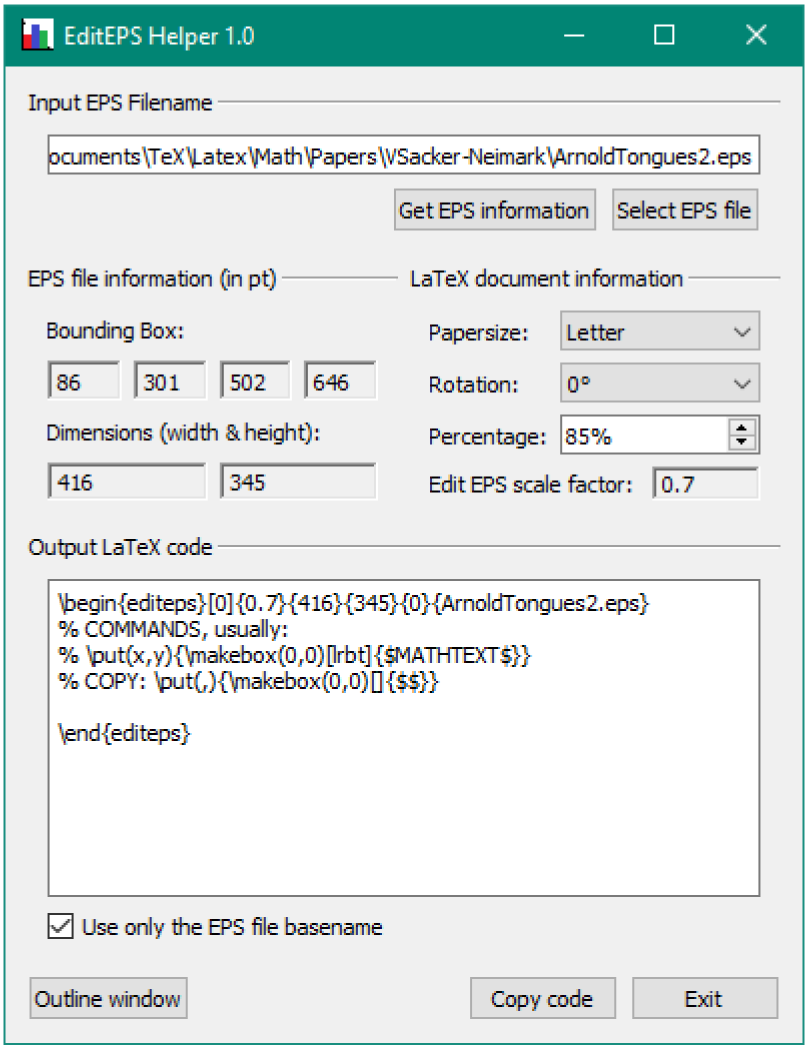

Figure 1: EditEPS Helper Main Window

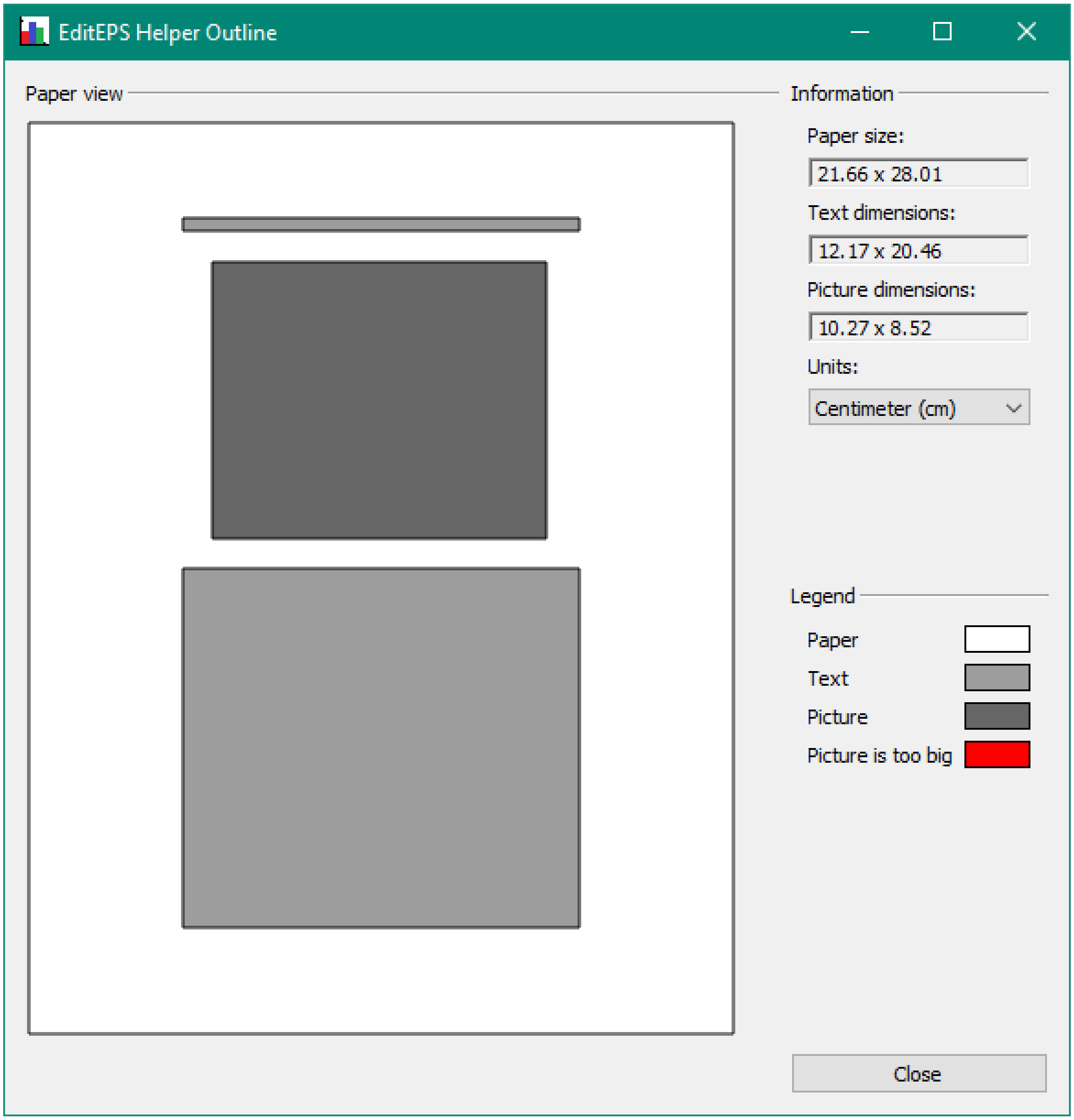

Figure 2: EditEPS Helper Outline Window

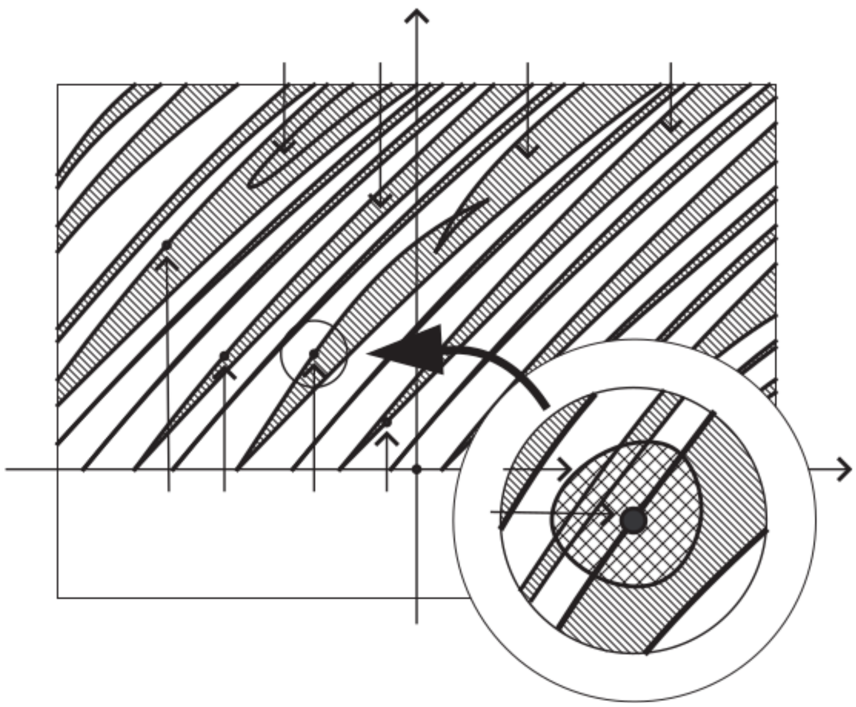

Figure 3: The original EPS picture (`ArnoldTongues2.eps`)

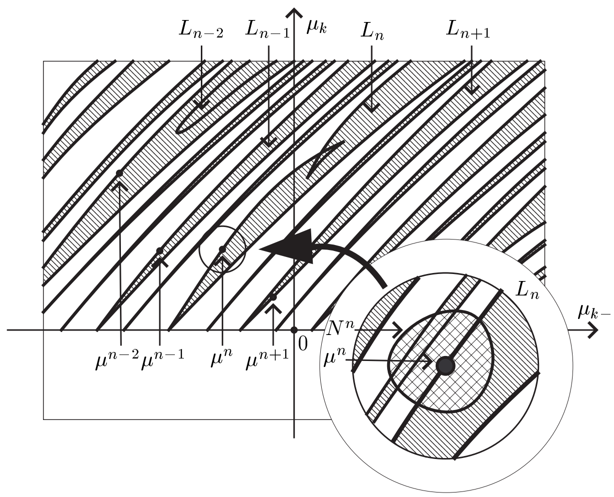

FIGURA 4. La sucesión $\{\mu^n\}$ y el entorno N^n.

En la construcción, $(F_n)_\mu$ coincide con $(F_{n-1})_\mu$ salvo para μ en un entorno de μ^n que no contiene a 0, como tomaremos estos entornos disjuntos, tendremos que F_n converge a $F_\infty \in \mathcal{U} \cap \mathcal{G}$ con $(F_\infty)_0 = F_0$ y $(F_\infty)_{\mu^j}$ no puede ser conjugado a ningún miembro de la familia F, lo que terminaría la prueba del teorema, pues $\mu^j \to 0$.

Podemos suponer que $\rho(\mu^n)$ es una sucesión monótona que va a $\theta_0 = \theta(0)$, donde $\rho(\mu^n) = \rho(F_{\mu^n}|_{\mathcal{C}_{\mu^n}})$. Supongamos que $\rho(\mu^n)$ es creciente. Para cada n, tomemos un entorno N^n de μ^n en $\{\mu_k > 0\}$. Estos entornos los podemos tomar de manera que $\rho(\mu) < \rho(\mu')$ si $\mu \in N^n$ y $\mu' \in N^{n+1}$. Notemos que $L_n = \rho^{-1}(\rho(\mu^n))$. Podemos suponer además que $\rho(N^n)$ es un intervalo que tiene a $\rho(\mu^n)$ como uno de sus extremos.

La prueba la haremos recursivamente. Sea $F_0 = F$ y veamos como definimos F_n una vez que F_{n-1} está definido.

Para cada q existe una aplicación $y^q : \bar{U}_1^q \to U_2$ C^∞ tal que $y^q(\mu)$ es un punto de $\mathcal{C}_\mu$ que no esta en la única órbita periódica de $F_\mu|_{\mathcal{C}_\mu}$. Definimos $\Xi^q : \bar{U}_1^q \times \mathbb{S}^1 \to \mathfrak{D}_0$ por $\Xi^q(\mu, \theta) = \Phi_\theta(\tau^{F_\mu}_{y^q(\mu)})$. Evidentemente Ξ^q es C^∞.

Tomamos $\tau^n \in \mathfrak{D}_0 \setminus \Xi^{q_n}(\bar{U}_1^{q_n} \times \mathbb{S}^1)$ tan cerca de $\Xi(\mu^n, 0)$ como sea necesario para que lo que sigue valga. La existencia de τ^n es una consecuencia de que $\mathfrak{D}_0$ tiene dimensión infinita mientras que $\Xi^{q_n}(\bar{U}_1^{q_n} \times \mathbb{S}^1)$ tiene dimensión k, ver [HW, teorema VII.3]. En virtud del lema 9, existe $g_n : \mathcal{C}_{\mu^n} \circlearrowleft$ cercano a $F_{\mu^n}|_{\mathcal{C}_{\mu^n}} = (F_{n-1})_{\mu^n}|_{\mathcal{C}_{\mu^n}}$ tal que $\tau^n = \tau^{g_n}_{y^{q^n}(\mu^n)}$. Además g_n coincide con $F_{\mu^n}|_{\mathcal{C}_{\mu^n}}$ fuera de $[y^{q^n}(\mu^n), F^{q^n}_{\mu^n}(y^{q^n}(\mu^n))]$. Como $\mathcal{C}_\mu$ es normalmente hiperbólica, es fácil ver que hay una familia a k parámetros de difeomorfismos G_n, cercana a F_{n-1}, tal que: $(G_n)_\mu$ deja invariante a $\mathcal{C}_\mu$, para todo μ; $(G_n)_{\mu^n}$ restringida a $\mathcal{C}_{\mu^n}$ es g_n, y G_n coincide con F_{n-1} fuera de $\tilde{N}^n \times V^n$, donde V^n es un entorno de $[y^{q^n}(\mu^n), F^{q^n}_{\mu^n}(y^{q^n}(\mu^n))] \subset$

Figure 4: LaTeX page with that EPS picture with LaTeX elements