

1. luadraw palettes

a. Description

You can use `@prism` palettes with `luadraw` which is a package that greatly facilitates the creation of high-quality 2D and 3D plots via `Lua` and `TikZ`.



Initially, the `@prism` project was created to provide ready-to-use palettes for `luadraw`.

b. Use a luadraw palette

The `Lua` palette names all use the prefix `pal` followed by the name available in the file `palettes.json`. You can access a palette by two ways.

- `palGistHeat` is a `Lua` variable.
- `getPal('GistHeat')` and `getPal('palGistHeat')` are equal to `palGistHeat`.
- For compatibility reasons with the `luadraw` API, there is also an associative array called `palNames`, which expects the variable name with `pal` prefix. See the caution note at the end of this section.



The `Lua` palette variables are arrays of arrays of three floats. Here is the definition of `palGistHeat`.

```
palGistHeat = {  
    {0.0, 0.0, 0.0},  
    {0.105882, 0.0, 0.0},  
    {0.211764, 0.0, 0.0},  
    {0.317647, 0.0, 0.0},  
    {0.429411, 0.0, 0.0},  
    {0.535294, 0.0, 0.0},  
    {0.641176, 0.0, 0.0},  
    {0.752941, 0.003921, 0.0},  
    {0.858823, 0.145098, 0.0},  
    {0.964705, 0.286274, 0.0},  
    {1.0, 0.42745, 0.0},  
    {1.0, 0.57647, 0.152941},  
    {1.0, 0.717647, 0.435294},  
    {1.0, 0.858823, 0.717647},  
    {1.0, 1.0, 1.0}  
}
```

The `getPal` function has some options. To explain how this works, let's consider the following use case.

```
mypal = getPal(  
    'GistHeat',  
    {  
        extract = {2, 5, 8, 9},  
        shift   = 1,  
        reverse = true  
    })
```

To simplify the explanations, we will refer to the colors in the standard palette '`GistHeat`' as `coul_1`, `coul_2`, etc. The options are then **processed in the following order**.

1. `{coul_2, coul_5, coul_8, coul_9}` is the result of the extraction.
2. `{coul_9, coul_2, coul_5, coul_8}` comes from the shifting applied to the extracted palette (colors move to the right if `shift` is positive).
3. `{coul_8, coul_5, coul_2, coul_9}` is the reversed version of the shifted palette.

 Caution.

The current version of `luadraw` simply uses the palettes provided by `@prism` without the `getPal` function. If you prefer to use the `@prism` version with its `getPal` function, you will need to include the entire code in the `luadraw` file where the package is installed.

 Note.

The reversed version of any palette can be obtained using `getPal(palname, {reverse = true})`.