

Mapping Functions

Hyperupic's color mapping process requires an amplitude index function. This function is the mapping index of color data to frequency amplitude data. When constructing your own mapping tables, keep in mind that the

color white is stored as:

```
red:255; green:255; blue:255
```

And the color black is stored as:

```
red:0; green:0; blue:0
```

I have included several example amplitude mapping function files with this release. *mapfunk3* is my personal fave. Most are conservatively designed to map white onto silence (amplitude 0.0) and black to maximum amplitude (amplitude 1.0) as most start at magnitude 1.0 and logarithmically fall to magnitude 0.0. Within ***Hyperupic***, this relationship can easily be reversed by pressing:

reverse mapping

located on ***Hyperupic***'s main window. Keep in mind that symmetric mapping functions are identical to their retrograde counterparts; reversing symmetric functions shouldn't change the result of a transduction. You can create an arbitrary mapping function if you like. They are stored as streams of binary (32-bit) floating point numbers. They can be any length

less than 131073:

```
HyperupicGen.h:15:#define Max_Table_Size 131073
```

After converting these streams to ascii, and adding abscissae, the functions can be viewed by an application such as Dennis Jespersen's and Tom Pulliam's **nxyplot**. What? You want me to do this for you too? Some nerve. Learn awk. But seriously, I'd love to have a nice function creation

and viewing class that I could add to my applications; maybe someday I'll have time to write one.