The DSSerif Package

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October 28, 2021

DSSerif is short for Double Struck Serif, and, while based on the Courier clone of URW++ (version 2), though much distorted, its double striking and weights are very much in the style of the STIX double struck fonts. The main difference between the two is that STIX is sans serif, while DSSerif is not. The package has the following options: used to scale

- `scaled` (or `scale`) controls the relative size, as in

  `\usepackage[scaled=1.03]{dsserif}`

- `bbsymbols` (or `symbols`) controls whether the font is set up as a symbol font. (The default is to set it up as a Math Alphabet, which makes more efficient use of the LaTeX limitation to just 16 math families.)

- `bfbb` forces the package to not load the regular weight, but use `\mathbb` as if bold were the regular weight.

The available characters are:
In regular weight:

$$0\ 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9$$

$$\imath\ \jmath\ \Gamma\ \Delta\ \Theta\ \Lambda\ \Pi\ \Sigma\ \Phi\ \Psi\ \Omega$$

$$A\ B\ C\ D\ E\ F\ G\ H\ I\ J\ K\ L\ M$$

$$N\ O\ P\ Q\ R\ S\ T\ U\ V\ W\ X\ Y\ Z$$

$$a\ b\ c\ d\ e\ f\ g\ h\ i\ j\ k\ l\ m$$

$$n\ o\ p\ q\ r\ s\ t\ u\ v\ w\ x\ y\ z$$

In bold:

$$0\ 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9$$

$$\imath\ \jmath$$

$$A\ B\ C\ D\ E\ F\ G\ H\ I\ J\ K\ L\ M$$

$$N\ O\ P\ Q\ R\ S\ T\ U\ V\ W\ X\ Y\ Z$$

$$a\ b\ c\ d\ e\ f\ g\ h\ i\ j\ k\ l\ m$$

$$n\ o\ p\ q\ r\ s\ t\ u\ v\ w\ x\ y\ z$$

If you load the `dsserif` package using

`\usepackage{dsserif}`

then most of these are accessed in the usual ways using \mathbb. E.g., \mathbb{0}, \mathbb{A} and \mathbb{z} produce $\mathbb{0}$, $\mathbb{A}$ and $\mathbb{z}$ unless \boldmath was previously specified, and $\mathbb{0}$, $\mathbb{A}$ and $\mathbb{z}$ otherwise. Finally, the macro \mathbfbb may be used without \boldmath or \bm to render a bold symbol, e.g., \mathbfbb{A} gives $\mathbf{\mathbb{A}}$.

Macros for non-alphanumeric characters
For the following paragraph, you need to use the option bfbb.
The dotless i and j require the special macros \bbdotlessi, \bbdotlessj (or \imathbb, \jmathbb.) If you load the package bm, then the macro \bm{} will in all cases give you the bold version. E.g., \bm{\bbdotlessi} gives $\imath$, as expected. There are also some Greek letters available. Currently, these are only in regular weight and are pictured above, having names

```
\bbGamma
\bbDelta
\bbTheta
\bbLambda
\bbPi
\bbSigma
\bbPhi
\bbPsi
\bbOmega
```

I like to use $\imath$ and $\jmath$ (or their bold versions) for unit vectors in the x and y directions, though this is not ISO compliant, and prefer the output to what I would get from the corresponding STIX symbols, where there can be problems distinguishing unserifed glyphs.

The DSSerif glyphs may also be accessed using mathalpha:

```
\usepackage[bb=dsserif]{mathalpha} % there are also options bfbb and bbsymbols
```

(added after loading other math fonts) will redefine \mathbb and \mathbfbb to point to the DSSerif versions. Use of either dsserif or mathalpha will entail using at least one of your precious math groups. You may find it sufficient to simply use the symbols as text. E.g.,

```
$x\in \text{{\usefont{U}{DSSerif}{m}{n}C}}^n$
```

renders as $x \in \mathbb{C}^n$ without using an additional math group. If you try to do this with uppercase Greek letters, you'll find you have to use the slot numbers, as in

```
$x\in \text{{\usefont{U}{DSSerif}{m}{n}\char1 }}^n$ % Delta
```

If using newtxmath, version 1.55 or higher, with the stix2 option, you will find the DSSerif alphabet built in though without the Greek letters, and it will not be necessary to load it with further commands. See the newtx documentation for further details.