

The `cmathbb` Package

To Call Blackboard Bold Characters Compatible with the Computer Modern
Font Family, Version 1.0

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1 Introduction

Neither the `mathbb` font of $\mathcal{A}\mathcal{M}\mathcal{S}$ provided by the package of `amsfonts` or `amssymb` nor the blackboard bold or double stroke fonts provided by packages of `mathbbold`, `mathbbol`, `bbm`, `mathds` and so on are well compatible with the Computer Modern font family default in \LaTeX because of stroke characteristics or line weights. So it may be necessary to create a new `mathbb` font.

The new `mathbb` font was designed by Conden Chao with Adobe Illustrator 2018 and design FontLab 7 on September 9–15, 2020 and the package was created by Saravanan Murugaiah on September 10–17, 2020. We call the new `mathbb` font and the package as `cmathbb` which is a shorthand for “Computer Modern Mathematical Blackboard Bold”.

2 Usage

This `cmathbb` font can be used not only with Computer Modern font family but also with all the fonts in the \LaTeX document by putting the following codes in the preamble:

```
\usepackage{cmathbb} cmathbb
```

Then you can use the default command `\mathbb` or `\CMath` in the mathematical environment to call the characters, for which `\mathbb` consistent with habits of most users is strongly recommended. Note that the `cmathbb` package invokes the `amsfonts` package in default. `\mathbb`
`\CMath`

You can use any command such as \LaTeX , $\text{PDF}\text{\LaTeX}$, $\text{Xe}\text{\LaTeX}$, $\text{Xe}\text{\LaTeX}$, $\text{Lua}\text{\LaTeX}$ and so on to compile the document involving the `cmathbb` package.

3 Symbols

The `cmathbb` package can call all the digits, and Latin letters uppercase and lowercase of which appearances¹ are as follows.

*zhaoxy00@126.com. Thanks to Donald Knuth, who created Computer Modern font family in 1977–1979, and also thanks to Barbara Beeton who to some extent motivates me to design the `cmathbb` font.

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¹Greek letters uppercase and lowercase can be also called in the future. And as noted in Section 2, we can use `\CMath` instead of `\mathbb` too.

Output	Command	Output	Command	Output	Command
1	<code>\mathbb{1}</code>	2	<code>\mathbb{2}</code>	3	<code>\mathbb{3}</code>
4	<code>\mathbb{4}</code>	5	<code>\mathbb{6}</code>	6	<code>\mathbb{6}</code>
7	<code>\mathbb{7}</code>	8	<code>\mathbb{8}</code>	9	<code>\mathbb{9}</code>
0	<code>\mathbb{0}</code>				
A	<code>\mathbb{A}</code>	B	<code>\mathbb{B}</code>	C	<code>\mathbb{C}</code>
D	<code>\mathbb{D}</code>	E	<code>\mathbb{E}</code>	F	<code>\mathbb{F}</code>
G	<code>\mathbb{G}</code>	H	<code>\mathbb{H}</code>	I	<code>\mathbb{I}</code>
J	<code>\mathbb{J}</code>	K	<code>\mathbb{K}</code>	L	<code>\mathbb{L}</code>
M	<code>\mathbb{M}</code>	N	<code>\mathbb{N}</code>	O	<code>\mathbb{O}</code>
P	<code>\mathbb{P}</code>	Q	<code>\mathbb{Q}</code>	R	<code>\mathbb{R}</code>
S	<code>\mathbb{S}</code>	T	<code>\mathbb{T}</code>	U	<code>\mathbb{U}</code>
V	<code>\mathbb{V}</code>	W	<code>\mathbb{W}</code>	X	<code>\mathbb{X}</code>
Y	<code>\mathbb{Y}</code>	Z	<code>\mathbb{Z}</code>		
a	<code>\mathbb{a}</code>	b	<code>\mathbb{b}</code>	c	<code>\mathbb{c}</code>
d	<code>\mathbb{d}</code>	e	<code>\mathbb{e}</code>	f	<code>\mathbb{f}</code>
g	<code>\mathbb{g}</code>	h	<code>\mathbb{h}</code>	i	<code>\mathbb{i}</code>
j	<code>\mathbb{j}</code>	k	<code>\mathbb{k}</code>	l	<code>\mathbb{l}</code>
m	<code>\mathbb{m}</code>	n	<code>\mathbb{n}</code>	o	<code>\mathbb{o}</code>
p	<code>\mathbb{p}</code>	q	<code>\mathbb{q}</code>	r	<code>\mathbb{r}</code>
s	<code>\mathbb{s}</code>	t	<code>\mathbb{t}</code>	u	<code>\mathbb{u}</code>
v	<code>\mathbb{v}</code>	w	<code>\mathbb{w}</code>	x	<code>\mathbb{x}</code>
y	<code>\mathbb{y}</code>	z	<code>\mathbb{z}</code>		

4 Notes

Permission is granted to copy, distribute and modify the `cmathbb` font and package but thanks to the authors are appreciated. All the advice on the `cmathbb` font could be sent to Conden Chao, while any problem produced in using the `cmathbb` package should be sent to Saravanan Murugaiah.

5 History

- 2020-09-17 Conden Chao uploaded the `camthbb` package to the CTAN.
- 2020-09-17 Saravanan Murugaiah finished writing the `camthbb` package.
- 2020-09-15 Conden Chao finished designing the `camthbb` font.
- 2020-09-10 Saravanan Murugaiah began to write the `camthbb` package.
- 2020-09-09 Conden Chao began to design the `cmathbb` font.