The medmath package

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Version 2025A (2025-02-22)

1 Introduction

1.1 The mediummath option in nccmath package

There are several problems with mediummath option in nccmath package.

1. The big operators in superscripts and subscripts are too large.

```
\[A^{\sum_{0}^{1}x}=B\]
```

$$A^{\sum_{0}^{1}x}=B$$

2. The definite integrals inside cases environment sometimes cause infinite loops.

```
\[\begin{cases}
a & \int_1^t
\end{cases}\]
```

3. The \oiint operators are not scaled to medium size.

```
\[\oiint_{\Sigma}xyzdS=\frac{\sqrt{3}}{120}\]
```

$$\oiint_{\Sigma} xyzdS=\frac{\sqrt{3}}{120}$$

1.2 The medmath package

The medmath package started as a fork of mediummath code in nccmath package, aiming to provide more stable and flexible medium-size math commands.

1. The big operators in superscripts and subscripts are in medium size.

```
\[A^{\sum_{0}^{1}x}=B\]
```

$$A^{\sum_{0}^{1}x}=B$$

2. The definite integrals inside cases environment always work.

```
\[\begin{cases}
a & \int_1^t
\end{cases}\]
```

$$\begin{cases} a & \int_1^t \end{cases}$$

3. The \oiint operators are scaled to medium size.

```
\[\oiint_{\Sigma}xyzdS=\frac{\sqrt{3}}{120}\]
```

$$\oiint_{\Sigma} xyzdS=\frac{\sqrt{3}}{120}$$

2 Usage

Since medmath package is a fork of mediummath option in nccmath package, the usage is basically the same. Here is a minimal example:

```
\documentclass{article}
\usepackage{medmath}
\begin{document}
Inline $\int_0^1x^2dx=\frac13$.
Displayed \[ \int_0^1x^2dx=\frac13.  \]
\end{document}
```

Inline $\int_0^1 x^2 dx = \frac{1}{3}$. Displayed

$$\int_0^1 x^2 dx = \frac{1}{3}.$$

You will see that both integral symbols and both fractions are in medium size. You could see the differences if you remove `\usepackage{medmath}` line.

Since version 2024E, medmath package is able to adjust `\medintcorr` for some math fonts, hence integral operators with subscripts will look better. As a start, only three fonts (Computer Modern, Mathdesign Utopia, and Mathdesign Charter) are detected.