The ncccomma package*

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The package implements the smart comma in math mode. Let us compare this solution with the concurrent solution from the `icomma` package by Walter Schmidt:

- In `icomma`, a comma in math works as the punctuation mark if a space goes after it. Otherwise, it work as an ordinary character;
- In `ncccomma`, a comma in math works as an ordinary character if a decimal character goes after it. Otherwise, it works as a punctuation mark.

The solution used in this package is more expansive because we compare the next character with up to ten decimal chars. But this solution needs less number of spaces to be inserted into original document (the space is only necessary in the place of a comma delimiting something and a decimal number).

`\mathcomma` The original math comma is saved in the `\mathcomma` macro. This macro is useful together with the `dcolumn` package. If a comma should be *printed* as the decimal separator in a column of type `D`, it must be specified as `{\mathcomma}`, rather than `{,}`, since the latter leads to an error. For example:

```
\begin{tabular}{D{,}{\mathcomma}{-1}}
```

`\ordcommalist` The list of decimal characters is saved in the `\ordcommalist`. It initial definition is

```
\newcommand\ordcommalist{0123456789}
```

You can redefine it if necessary.

1 The Implementation

We save the original comma in `\mathcomma` and then specify the comma to be an active char in math.

```
1 ⟨*package⟩
2 \mathchardef\mathcomma\mathcode`\,
3 \mathcode`\,="8000
```

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No we define the meaning of comma using the well-known trick with upper case.

```
\bgroup
  \uccode`\~`\,%
  \uppercase{%
\egroup
  \def~}{\futurelet\@let@token\NCC@comma}
```

The smart comma compares the next char with a character of the `\ordcommalist` in cycle. This cycle is a bit expansive, but it is the payment for smartness.

```
\newcommand\ordcommalist{0123456789}
\def\NCC@comma{%
  \let\@tempb\@empty
  \expandafter\@tfor\expandafter\@tempa\expandafter:\expandafter=%
  \ordcommalist\do{%
    \expandafter\ifx\@tempa\@let@token
      \let\@tempb\mathord \@break@tfor
    \fi
  }%
  \@tempb\mathcomma
}
⟨/package⟩
```