The `leftidx` package*

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Abstract
This package enables left subscripts and superscripts in math mode. These subscripts and superscripts are automatically raised for better fitting to the symbol they belong to.

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1 Introduction
In mathematical equations, it is sometimes necessary to use indices (subscript or superscript) that are positioned at the left side of a symbol. In tensor mathematics, for instance, some notations use a transposed sign at the left side of the symbol:

\[ A_{ij} \rightarrow (A_{ji}) \]

For symbols with a normal character height, this can be reached by simply put the indices without an own symbol:

\[ (A_{ij}) \]

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\[ (_1^2) a_3^4 \]

Is the symbol larger, this leads to unsatisfactory results:

\[ (_1^2) \left( \frac{1}{b} \right)_3^4 \]

A better output can be reached by using the package leftidx.sty:

\[ \leftidx{(_1^2)}{\left( \frac{1}{b} \right)}{(_3^4)} \]

\section{Usage of the package}

Two commands are provided by the package.

\texttt{\leftidx} The \texttt{\leftidx} command has the syntax \texttt{\leftidx{⟨left indices⟩}{⟨symbol⟩}{⟨right indices⟩}}. This command typesets the symbol \texttt{⟨symbol⟩} with indices on the left and on the right side. Example:

\[ \leftidx{(_1^2)}{\left( \frac{1}{b} \right)}{(_3^4)} \]

You may omit left or right indices by using empty arguments.

The next example shows the same in the different mathematical styles:

\[ 2 \left( \frac{1}{b} \right)_3^4 \]

As you can see from the left indices, the horizontal spacing of the left indices is not perfect. You have to adjust them by yourself.

\texttt{\ltrans} The \texttt{\ltrans} command typesets a small upright “t” as transposed sign on the left side of \texttt{⟨symbol⟩}. Example:

\[ \ltrans{\underline{\underline{J}}} = \underline{\underline{J}}^{-1} \]

\section{The implementation}

Heading of the package:

1 \texttt{\NeedsTeXFormat{LaTeX2e}[1995/12/01]}
2 \texttt{\ProvidesPackage{leftidx}[]{\filedate}\space v\fileversion\space Left indices}

\texttt{\leftidx} Command for left indices. The braces around the \texttt{\vphantom} are necessary to really raise the left indices.
3 \texttt{\newcommand\leftidx{[3]}{\%}
4 \quad {\\vphantom{#2}}#1#2#3\%
5 \} \texttt{\ltrans} Left positioned transposed sign.
6 \texttt{\newcommand{\ltrans[1]}{\leftidx{\^{\mathrm{t}}}{!\#1}}}
Change History

1.03
General: Reimplementation with \leftidx: Implementation simply- dtx format with English docu- fied .................... 2
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