The fixmath package for \LaTeX2ε

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- Uppercase Greek letters are always typset upright, as opposed to italic, even though they are usually to represent variables.

- There is no obvious way to typset variables in a bold italic style, even though the required fonts are available. (The \texttt{bm} package is overly complex and not always reliable.)

If you are using the default Computer Modern math fonts, this can be fixed by loading the package \texttt{fixmath}:

- Uppercase Greek will be typeset in italic style then.

- Upright ∆ and Ω symbols are still available through the commands \texttt{\upDelta} and \texttt{\upOmega}.

- A new math alphabet \texttt{\mathbold} will provide bold italic letters.

The \texttt{fixmath} package should be used \textit{only} in conjunction with the CM math fonts; most likely, it will not work with others. Many packages for using alternative math fonts, such as \texttt{mathpazo} (for Palatino), provide the \texttt{\mathbold} alphabet already and can be loaded with an option \texttt{\slantedGreek} to make the uppercase Greek letters cursive.

The package code

Save uppercase ∆ and Ω:
1 \texttt{(\texttt{\package})}
2 \texttt{\let\upOmega\Omega}
3 \texttt{\let\upDelta\Delta}

Provide italic uppercase Greek:
4 \texttt{\DeclareMathSymbol{\Gamma}{\mathalpha}{\letters}{\empty}}
5 \texttt{\DeclareMathSymbol{\Delta}{\mathalpha}{\letters}{\empty}}
6 \texttt{\DeclareMathSymbol{\Theta}{\mathalpha}{\letters}{\empty}}
7 \texttt{\DeclareMathSymbol{\Lambda}{\mathalpha}{\letters}{\empty}}

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Prepare lowercase Greek for $\mathbold$: 
\begin{verbatim}
\DeclareMathSymbol{\alpha}{\mathalpha}{letters}{11}
\DeclareMathSymbol{\beta}{\mathalpha}{letters}{12}
\DeclareMathSymbol{\gamma}{\mathalpha}{letters}{13}
\DeclareMathSymbol{\delta}{\mathalpha}{letters}{14}
\DeclareMathSymbol{\epsilon}{\mathalpha}{letters}{15}
\DeclareMathSymbol{\zeta}{\mathalpha}{letters}{16}
\DeclareMathSymbol{\eta}{\mathalpha}{letters}{17}
\DeclareMathSymbol{\theta}{\mathalpha}{letters}{18}
\DeclareMathSymbol{\iota}{\mathalpha}{letters}{19}
\DeclareMathSymbol{\kappa}{\mathalpha}{letters}{20}
\DeclareMathSymbol{\lambda}{\mathalpha}{letters}{21}
\DeclareMathSymbol{\mu}{\mathalpha}{letters}{22}
\DeclareMathSymbol{\nu}{\mathalpha}{letters}{23}
\DeclareMathSymbol{\xi}{\mathalpha}{letters}{24}
\DeclareMathSymbol{\pi}{\mathalpha}{letters}{25}
\DeclareMathSymbol{\rho}{\mathalpha}{letters}{26}
\DeclareMathSymbol{\sigma}{\mathalpha}{letters}{27}
\DeclareMathSymbol{\tau}{\mathalpha}{letters}{28}
\DeclareMathSymbol{\upsilon}{\mathalpha}{letters}{29}
\DeclareMathSymbol{\phi}{\mathalpha}{letters}{30}
\DeclareMathSymbol{\chi}{\mathalpha}{letters}{31}
\DeclareMathSymbol{\psi}{\mathalpha}{letters}{32}
\DeclareMathSymbol{\omega}{\mathalpha}{letters}{33}
\DeclareMathSymbol{\varepsilon}{\mathalpha}{letters}{34}
\DeclareMathSymbol{\vartheta}{\mathalpha}{letters}{35}
\DeclareMathSymbol{\varpi}{\mathalpha}{letters}{36}
\DeclareMathSymbol{\varphi}{\mathalpha}{letters}{37}
\DeclareMathSymbol{\varrho}{\mathalpha}{letters}{38}
\DeclareMathSymbol{\varsigma}{\mathalpha}{letters}{39}
\end{verbatim}

Define $\mathbold$:
\begin{verbatim}
\DeclareMathAlphabet{$\mathbold$}{OML}{cmm}{b}{it}
\end{verbatim}

The next line of code prevents DocStrip from adding the character table to all modules:
\begin{verbatim}
\endinput
\end{verbatim}