

# The `mystyletau` package

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## 1 Introduction

The `mystyletau` package introduces two custom glyphs for the letter  $\tau$ . While the standard notation for a topological space  $(X, \tau_X)$  is functional, the authors believe these variants offer superior aesthetic appeal for denoting topologies or algebraic structures.

## 2 New in Version 2.0

Version 2.0 marks a significant technical shift. The symbols are no longer external PDF images; they are now implemented as true vector glyphs within a dedicated TrueType font (`mytautwo.ttf`). This ensures:

- **Mathematical Integration:** Symbols scale perfectly in subscripts ( $\mathcal{T}_{\mathcal{T}}$ ) and superscripts.
- **Color Support:** Symbols dynamically respond to color commands, e.g.,  $\textcolor{red}{\mathcal{T}}$  or  $\textcolor{blue}{\mathcal{T}}$ .
- **Mode Independence:** Commands work in both text and math mode via `\ensuremath`.

## 3 Usage

**Important:** This package requires the use of **LuaLaTeX** or **XeLaTeX**. Compilation with `pdflatex` will result in a fatal error, as the `fontspec` package is used to handle the custom vector font.

The following commands provide access to the custom glyphs:

- `\vtau`:  $\mathcal{T}$
- `\atau`:  $\mathfrak{T}$

## 4 Examples

Consider the following statements to compare the visual impact:

1. Standard: Let  $(X, \tau_X)$  be a topological space.
2. Variant A: Let  $(X, \mathcal{T}_X)$  be a topological space.
3. Variant B: Let  $(X, \mathfrak{T}_X)$  be a topological space.

The authors suggest that notations like  $(X, \mathcal{T}_X)$  and  $(X, \mathfrak{T}_X)$  provide a more elegant visual impact compared to the standard Computer Modern  $(X, \tau_X)$ .