

# The mdframed package

Examples for `framemethod=default`

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v1.3

2012/02/04

In this document I collect various examples for `framemethod=default`. Some presented examples are more or less exorbitant.

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## 1 Loading

In the preamble only the package `mdframed` with the option `framemethod=default` is loaded. All other modifications will be done by `\mdfdefinestyle` or `\mdfsetup`.

### Note

Every `\global` inside the examples is necessary to work with the package `showexpl`.

## 2 Examples

All examples have the following settings:

```
\mdfsetup{skipabove=\topskip, skipbelow=\topskip}
\newrobustcmd\ExampleText{%
An \textit{inhomogeneous linear} differential equation
has the form
\begin{align}
L[v] = f,
\end{align}
where  $L$  is a linear differential operator,  $v$  is
the dependent variable, and  $f$  is a given non-zero
function of the independent variables alone.
}
```

## Example 1 – very simple

```

\global\mdfdefinestyle{exampledefault}{%
  \linecolor=red , \linewidth=3pt , %
  \leftmargin=1cm , \rightmargin=1cm
}
\begin{mdframed}[style=exampledefault]
\ExampleText
\end{mdframed}

```

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \tag{1}$$

where  $L$  is a linear differential operator,  $v$  is the dependent variable, and  $f$  is a given non-zero function of the independent variables alone.

## Example 2 – hidden line + frame title

```

\global\mdfapptodefinestyle{exampledefault}{%
  \topline=false , \rightline=true , \bottomline=false }
\begin{mdframed}[style=exampledefault , frametitle={Inhomogeneous linear}]
\ExampleText
\end{mdframed}

```

**Inhomogeneous linear**

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \tag{2}$$

where  $L$  is a linear differential operator,  $v$  is the dependent variable, and  $f$  is a given non-zero function of the independent variables alone.

## Example 3 – colored frame title

```

\global\mdfapptodefinestyle{exampledefault}{%
  rightline=true,innerleftmargin=10,innerrightmargin=10,
  frametitle=rule=true,frametitle=rulecolor=green,
  frametitlebackgroundcolor=yellow,
  frametitle=rulewidth=2pt}
\begin{mdframed}[style=exampledefault,frametitle={Inhomogeneous linear}]
\ExampleText
\end{mdframed}

```

**Inhomogeneous linear**

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \quad (3)$$

where  $L$  is a linear differential operator,  $v$  is the dependent variable, and  $f$  is a given non-zero function of the independent variables alone.

## Example 4 – framed picture which is centered

```

\begin{mdframed}[userdefinedwidth=6cm,align=center,
  linecolor=blue,linewidth=4pt]
\includegraphics[width=\linewidth]{donald-duck}
\end{mdframed}

```



## Example 5 – Theorem environments

```

\mdfdefinestyle{theoremstyle}{%
  \linecolor=red,\linewidth=2pt,%
  \frametitle rule=true,%
  \frametitlebackgroundcolor=gray!20,%
  \innertopmargin=\topskip,
}
\mdtheorem[style=theoremstyle]{definition}{Definition}
\begin{definition}
\ExampleText
\end{definition}
\begin{definition}[Inhomogeneous linear]
\ExampleText
\end{definition}
\begin{definition*}[Inhomogeneous linear]
\ExampleText
\end{definition*}

```

**Definition 1**

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \quad (4)$$

where  $L$  is a linear differential operator,  $v$  is the dependent variable, and  $f$  is a given non-zero function of the independent variables alone.

**Definition 2: Inhomogeneous linear**

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \quad (5)$$

where  $L$  is a linear differential operator,  $v$  is the dependent variable, and  $f$  is a given non-zero function of the independent variables alone.

**Definition: Inhomogeneous linear**

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \quad (6)$$

where  $L$  is a linear differential operator,  $v$  is the dependent variable, and  $f$  is a given non-zero function of the independent variables alone.

## Example 6 – theorem with separate header and the help of TikZ (complex)

```

\newcounter{theo}[section]
\newenvironment{theo}[1][ ]{ %
\stepcounter{theo}%
\ifstrepty{#1}%
{ \mdfsetup{%
frametitle={%
\tikz[baseline=(current bounding box.east),outer sep=0pt]
\node[anchor=east,rectangle,fill=blue!20]
{ \strut Theorem~\thetheo };}}
}%
{ \mdfsetup{%
frametitle={%
\tikz[baseline=(current bounding box.east),outer sep=0pt]
\node[anchor=east,rectangle,fill=blue!20]
{ \strut Theorem~\thetheo:~#1 };}}}%
}%
\mdfsetup{innertopmargin=10pt,linewidth=2pt,topline=true,
frametitleaboveskip=\dimexpr-\ht\strutbox\relax,}
\begin{mdframed}[]\relax%
}{\end{mdframed}}
\begin{theo}[Inhomogeneous Linear]
\ExampleText
\end{theo}

\begin{theo}
\ExampleText
\end{theo}

```

**Theorem 1: Inhomogeneous Linear**

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \quad (7)$$

where  $L$  is a linear differential operator,  $v$  is the dependent variable, and  $f$  is a given non-zero function of the independent variables alone.

**Theorem 2**

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \quad (8)$$

where  $L$  is a linear differential operator,  $v$  is the dependent variable, and  $f$  is a given non-zero function of the independent variables alone.

**Example 7 – hide only a part of a line**

The example below is inspired by the following post on StackExchange [Theorem decorations that stay with theorem environment](#)

```

\makeatletter
\newlength{\interruptlength}
\setlength{\interruptlength}{2.5ex}
\newrobustcmd{\overlaplines}{%
  \appto\mdf@frame@leftline@single{%
    \llap{\color{white}%
      \rule[\dimexpr-\mdfboundingboxdepth+\interruptlength\relax]{%
        {\mdf@middlelinewidth@length}%
        {\dimexpr\mdfboundingboxtotalheight%
          \ifbool{mdf@topline}{+\mdf@middlelinewidth@length}{}}
        -2\interruptlength\relax}%
      }%
    }%
  \appto\mdf@frame@rightline@single{%
    \rlap{\color{white}%
      \hspace*{\mdfboundingboxwidth}%
      \hspace*{\mdf@innerrightmargin@length}%
      \rule[\dimexpr-\mdfboundingboxdepth%
        +\interruptlength\relax]{%
        {\mdf@middlelinewidth@length}%
        {\dimexpr\mdfboundingboxtotalheight%
          +\ifbool{mdf@topline}{\mdf@middlelinewidth@length}{0pt}}
        -2\interruptlength\relax}%
      }%
    }%
  }
\makeatother
\overlaplines

\begin{mdframed}[linecolor=blue,linewidth=8pt]
\ExampleText
\end{mdframed}

```

An *inhomogeneous linear* differential equation has the form

$$L[v] = f, \tag{9}$$

where  $L$  is a linear differential operator,  $v$  is the dependent variable, and  $f$  is a given non-zero function of the independent variables alone.