# Test of the **overarrows** package predefined commands

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#### 

| \TestOverArrow*{vv}  | \TestOverArrow*{vv}  |  |   |  |  |  |
|--|--|--|---|--|--|--|
| Te   | Test of \vv and \vv* macros  |  |   |  |  |  |
|  | vv for differen  | t math styles  | 3   |  |  |  |
| \displaystyle  | \displaystyle \textstyle \scriptstyle \scriptscriptstyle   |  |   |  |  |  |
| $\overrightarrow{v}$   | $\overrightarrow{v}$   | $\overrightarrow{v}$   | $ec{v}$   |  |  |  |
| $\overrightarrow{AB}$  | $\overrightarrow{AB}$  | $\overrightarrow{AB}$  | $\overrightarrow{AB}$                               |  |  |  |
| $\overrightarrow{\operatorname{grad}}$   | $\overrightarrow{\operatorname{grad}}$   | $\overrightarrow{\operatorname{grad}}$   | $\overrightarrow{\operatorname{grad}}$              |  |  |  |
| $\overrightarrow{my\ long\ vector}$  | $\overrightarrow{my \ long \ vector}$  | $\overrightarrow{my\ long\ vector}$  | my long vector                                      |  |  |  |
|  | \vv ke   | rning  |   |  |  |  |
| $\overrightarrow{t}_{\overrightarrow{u}_{\overrightarrow{v}}}$ $\overrightarrow{i}_0$      | $\overrightarrow{t}_{\overrightarrow{u}_{\overrightarrow{v}}} \qquad \overrightarrow{t}_0 \qquad \overrightarrow{v} = \overrightarrow{v}_x + \overrightarrow{v}_y + \overrightarrow{v}_z = v_x \overrightarrow{\imath} + v_y \overrightarrow{\jmath} + v_z \overrightarrow{k}$ |  |   |  |  |  |
|  | \vv* ke  | erning   |   |  |  |  |
| $\overrightarrow{t}_{\overrightarrow{u}_{\overrightarrow{v}}}$ $\overrightarrow{\imath}_0$ | $\vec{v} = \vec{v}_x + \vec{v}$  | $\vec{v}_y + \vec{v}_z = v_x \vec{i} + \vec{v}_z = \vec{v}_x \vec{i} + \vec{v}_z = \vec{v}_z \vec{i} + \vec{v}_z = \vec{v}_$ | $-v_y\overrightarrow{\jmath}+v_z\overrightarrow{k}$ |  |  |  |
|  |  |  |   |  |  |  |

#### \overrightarrow

| o                                      | verrightarrow}                         |  |                                     |
|--|--|--|-------------------------------------|
| \displaystyle                          | \textstyle                             | \scriptstyle                           | \scriptscriptstyle                  |
| $\overrightarrow{v}$                   | $\overrightarrow{v}$                   | $\overrightarrow{v}$                   | $\overrightarrow{v}$                |
| $\overrightarrow{AB}$                  | $\overrightarrow{AB}$                  | $\overrightarrow{AB}$                  | $\overrightarrow{AB}$               |
| $\overrightarrow{\operatorname{grad}}$ | $\overrightarrow{\operatorname{grad}}$ | $\overrightarrow{\operatorname{grad}}$ | grad                                |
| $\overrightarrow{my \ long \ vector}$  | $\overrightarrow{my} \ long \ vector$  | $\overrightarrow{my\ long\ vector}$    | $\overrightarrow{my}\ long\ vector$ |

#### \underrightarrow

| u  | \TestOverArrow{underrightarrow}                  |  |  |  |  |
|--|--|--|--|--|--|
| \displaystyle                                    | \textstyle                                       | \scriptstyle                                     | \scriptscriptstyle                               |  |  |
| $\xrightarrow{\upsilon}$                         | $\xrightarrow{\upsilon}$                         | $\xrightarrow{v}$                                | $\xrightarrow{v}$                                |  |  |
| $\stackrel{AB}{\Longrightarrow}$                 | $\stackrel{AB}{\Longrightarrow}$                 | $\overset{AB}{\longrightarrow}$                  | $\overset{AB}{\longrightarrow}$                  |  |  |
| $\overset{\operatorname{grad}}{\longrightarrow}$ | $\overset{\operatorname{grad}}{\longrightarrow}$ | $\overset{\operatorname{grad}}{\longrightarrow}$ | $\overset{\operatorname{grad}}{\longrightarrow}$ |  |  |
| $\xrightarrow{my\ long\ vector}$                 | $\xrightarrow{my\ long\ vector}$                 | $\xrightarrow{my\ long\ vector}$                 | $\xrightarrow{my\ long\ vector}$                 |  |  |

#### 4 \overleftarrow

| o   | verleftarrow}                                   |  |   |
|---|---|--|---|
| \displaystyle                                   | \textstyle                                      | \scriptstyle                                     | \scriptscriptstyle                              |
| $\overline{\overleftarrow{v}}$                  | $\leftarrow$                                    | $\overleftarrow{v}$                              | ₹υ  |
| $\overleftarrow{AB}$                            | $\overleftarrow{AB}$                            | $\overleftarrow{AB}$                             | $\overleftarrow{AB}$                            |
| $\overset{\longleftarrow}{\operatorname{grad}}$ | $\overset{\longleftarrow}{\operatorname{grad}}$ | $\stackrel{\longleftarrow}{\operatorname{grad}}$ | $\overset{\longleftarrow}{\operatorname{grad}}$ |
| ← → → → → → → → → → → → → → → → → → → →         | $\stackrel{\longleftarrow}{my\ long\ vector}$   | $\stackrel{\longleftarrow}{my\ long\ vector}$    | $\stackrel{\longleftarrow}{my\ long\ vector}$   |

#### 5 \underleftarrow

| u  | \TestOverArrow{underleftarrow}                   |   |                                |  |  |
|--|--|---|--------------------------------|--|--|
| \displaystyle                                    | \textstyle                                       | \scriptstyle                                    | \scriptscriptstyle             |  |  |
| $\stackrel{\mathcal{U}}{\longleftarrow}$         | $\stackrel{v}{\leftarrow}$                       | $\stackrel{v}{\leftarrow}$                      | $\stackrel{v}{\leftarrow}$     |  |  |
| AB   | AB   | $\stackrel{AB}{\longleftarrow}$                 | $\overset{AB}{\longleftarrow}$ |  |  |
| $\stackrel{\operatorname{grad}}{\longleftarrow}$ | $\stackrel{\operatorname{grad}}{\longleftarrow}$ | $\overset{\operatorname{grad}}{\longleftarrow}$ | grad<br><del> </del>           |  |  |
| $\underset{\longleftarrow}{my\ long\ vector}$    | $\underset{\longleftarrow}{my\ long\ vector}$    | $\overset{my\ long\ vector}{\longleftarrow}$    | $my\ long\ vector$             |  |  |

# $6 \quad \verb|\| \text{overleftrightarrow} \\$

| \TestOverArrow{overleftrightarrow}                    |  |   |   |  |
|---|--|---|---|--|
| \displaystyle   | \textstyle   | \scriptstyle  | \scriptscriptstyle  |  |
| $\overline{\hspace{1cm}}$                             | $\overleftrightarrow{v}$                             | $\overleftrightarrow{v}$                              | $\overleftrightarrow{v}$  |  |
| $\overleftrightarrow{AB}$                             | $\overleftrightarrow{AB}$                            | $\overleftrightarrow{AB}$                             | $\overleftarrow{AB}$  |  |
| $\stackrel{\longleftrightarrow}{\operatorname{grad}}$ | $\overset{\longleftrightarrow}{\operatorname{grad}}$ | $\stackrel{\longleftrightarrow}{\operatorname{grad}}$ | $\overset{\longleftarrow}{\underset{\mathrm{grad}}{\longleftrightarrow}}$ |  |
| $\stackrel{\longleftarrow}{my\ long\ vector}$         | $\stackrel{\longleftarrow}{my\ long\ vector}$        | $\stackrel{\longleftarrow}{my\ long\ vector}$         | $\stackrel{\longleftarrow}{my\ long\ vector}$                             |  |

# 7 \underleftrightarrow

| \TestOverArrow{underleftrightarrow}                  |  |  |  |  |
|--|--|--|--|--|
| \displaystyle  | \textstyle   | \scriptstyle   | \scriptscriptstyle                                   |  |
| $\stackrel{v}{\longleftrightarrow}$                  | $\stackrel{v}{\longleftrightarrow}$                  | $\stackrel{v}{\longleftrightarrow}$                  | $\stackrel{v}{\longleftrightarrow}$                  |  |
| $\stackrel{AB}{\Longleftrightarrow}$                 | $\overset{AB}{\longleftrightarrow}$                  | $\overset{AB}{\longleftrightarrow}$                  | $\overset{AB}{\longleftrightarrow}$                  |  |
| $\overset{\operatorname{grad}}{\longleftrightarrow}$ | $\overset{\operatorname{grad}}{\longleftrightarrow}$ | $\overset{\operatorname{grad}}{\longleftrightarrow}$ | $\overset{\operatorname{grad}}{\longleftrightarrow}$ |  |
| $\underset{\longleftarrow}{my\ long\ vector}$        | $\overset{my\ long\ vector}{\longleftarrow}$         | $\xrightarrow{my\ long\ vector}$                     | $\overset{my\ long\ vector}{\longleftrightarrow}$    |  |

#### 8 \overrightharpoonup

| \TestOverArrow{overrightharpoonup}     |                                       |  |                            |  |
|--|---------------------------------------|--|----------------------------|--|
| \displaystyle                          | \textstyle                            | \scriptstyle                           | \scriptscriptstyle         |  |
| $\overrightarrow{v}$                   | $\overrightarrow{v}$                  | $\overrightarrow{v}$                   | $\overrightarrow{v}$       |  |
| $\overrightarrow{AB}$                  | $\overrightarrow{AB}$                 | $\overrightarrow{AB}$                  | $\overrightarrow{AB}$      |  |
| $\overrightarrow{\operatorname{grad}}$ | ${\operatorname{grad}}$               | $\overrightarrow{\operatorname{grad}}$ | $\overline{\mathrm{grad}}$ |  |
| ny long vector                         | $\overrightarrow{my \ long \ vector}$ | my long vector                         | my long vector             |  |

#### \underrightharpoonup

| u   | \TestOverArrow{underrightharpoonup}     |   |   |  |  |
|---|---|---|---|--|--|
| \displaystyle                                 | \textstyle                              | \scriptstyle                            | \scriptscriptstyle                                |  |  |
| $\underline{v}_{\downarrow}$                  | $\underline{v}_{\backprime}$            | $\underline{v}_{\backprime}$            | $\underline{v}$                                   |  |  |
| $\underline{AB}$                              | $\underline{AB}$                        | AB                                      | AB  |  |  |
| $\underline{\underline{\operatorname{grad}}}$ | $\underline{\underline{\mathrm{grad}}}$ | $\underline{\underline{\mathrm{grad}}}$ | $\stackrel{\operatorname{grad}}{\longrightarrow}$ |  |  |
| my long vector                                | my long vector                          | my long vector                          | my long vector                                    |  |  |

#### $10 \ \ \texttt{\ \ } \\ \texttt{overrightharpoondown}$

| \TestOverArrow{overrightharpoondown} |                         |                                  |                               |  |
|--------------------------------------|-------------------------|----------------------------------|-------------------------------|--|
| \displaystyle                        | \textstyle              | \scriptstyle                     | \scriptscriptstyle            |  |
| $\overline{v}'$                      | $\overline{v}'$         | $\overline{v'}$                  | $\overline{v'}$               |  |
| $\overrightarrow{AB}$                | $\overrightarrow{AB}$   | $\overrightarrow{AB}$            | $\overrightarrow{AB}$         |  |
| $\overline{\operatorname{grad}}$     | $\frac{-}{\text{grad}}$ | $\overline{\operatorname{grad}}$ | $_{ m grad}$                  |  |
| my long vector                       | my long vector          | my long vector                   | $\overline{my}\ long\ vector$ |  |

# \underrightharpoondown

| u                              | \TestOverArrow{underrightharpoondown}     |                                |                                  |  |  |
|--------------------------------|---|--------------------------------|----------------------------------|--|--|
| \displaystyle                  | \textstyle                                | \scriptstyle                   | \scriptscriptstyle               |  |  |
| $\frac{v}{}$                   | $\frac{v}{}$                              | $\frac{v}{}$                   | $\frac{v}{}$                     |  |  |
| AB                             | AB  | $\overrightarrow{AB}$          | $\stackrel{AB}{\longrightarrow}$ |  |  |
| $\frac{\operatorname{grad}}{}$ | $\frac{\operatorname{grad}}{\mathcal{I}}$ | $\frac{\operatorname{grad}}{}$ | grad                             |  |  |
| my long vector                 | my long vector                            | my long vector                 | my long vector                   |  |  |

# \overleftharpoonup

| c                    | verleftharpoonup}      |                      |                             |
|----------------------|------------------------|----------------------|-----------------------------|
| \displaystyle        | \textstyle             | \scriptstyle         | \scriptscriptstyle          |
| $\overline{v}$       | $\stackrel{\smile}{v}$ | $\overline{v}$       | 'v                          |
| $\overleftarrow{AB}$ | $\overleftarrow{AB}$   | $\overleftarrow{AB}$ | $\stackrel{\checkmark}{AB}$ |
| grad                 | $\operatorname{grad}$  | grad                 | grad                        |
| my long vector       | my long vector         | my long vector       | my long vector              |

# \underleftharpoonup

| \TestOverArrow{underleftharpoonup} |                       |                |                    |
|------------------------------------|-----------------------|----------------|--------------------|
| \displaystyle                      | \textstyle            | \scriptstyle   | \scriptscriptstyle |
| <u>v</u>                           | $\angle v$            | <u>,v</u>      | <u>v</u>           |
| <u>AB</u>                          | AB                    | AB             | AB                 |
| $\underline{\operatorname{grad}}$  | $\operatorname{grad}$ | grad           | grad               |
| my long vector                     | my long vector        | my long vector | my long vector     |

# $14 \quad \texttt{\ \ } \texttt{\ \ }} \texttt{\ \ } \texttt{\ \ }} \texttt{\ \ \ } \texttt{\ \ }} \texttt{\ \ \ } \texttt{\ \ \ } \texttt{\ \ }} \texttt{\ \ } \texttt{\ \ }} \texttt{\ \ } \texttt{\ \ } \texttt{\ \ }} \texttt{\ \ } \texttt{\ \ } \texttt{\ \ }} \texttt{\ \ } \texttt{\ \ } \texttt{\ \ }} \texttt{\ \ \ } \texttt{\ \ \ }} \texttt{\ \ } \texttt{\ \ }} \texttt{\ \ \ } \texttt{\ \ \ }} \texttt{\ \ \ }} \texttt{\ \ \ } \texttt{\ \ \ }} \texttt{\ \ \ } \texttt{\ \ \ }} \texttt{\ \ \ }} \texttt{\ \ \ \ } \texttt{\ \ \ }} \texttt{\ \ \ \ } \texttt{\ \ \ }} \texttt{\ \ \ }} \texttt{\ \ \ }} \texttt{\ \ \ \ \ }} \texttt{\ \ \ \ }} \texttt{\ \ \ \ }} \texttt{\ \ \ \ \ \ }} \texttt{\ \ \ \ \ \ }} \texttt{\ \ \ \ \ }} \texttt{$

| \TestOverArrow{overleftharpoondown} |                                  |                                  |                    |
|-------------------------------------|----------------------------------|----------------------------------|--------------------|
| \displaystyle                       | \textstyle                       | \scriptstyle                     | \scriptscriptstyle |
| $\overline{v}$                      | $\overline{v}$                   | $\overline{v}$                   | $\overline{v}$     |
| $\overline{AB}$                     | $\overline{AB}$                  | $\overline{AB}$                  | $\overline{AB}$    |
| $\overline{\operatorname{grad}}$    | $\overline{\operatorname{grad}}$ | $\overline{\operatorname{grad}}$ | grad               |
| my long vector                      | my long vector                   | my long vector                   | my long vector     |

# $15 \quad \verb|\underleftharpoondown|$

| \TestOverArrow{underleftharpoondown} |                       |  |                                 |
|--------------------------------------|-----------------------|--|---------------------------------|
| \displaystyle                        | \textstyle            | \scriptstyle                                     | \scriptscriptstyle              |
| $\overline{v}$                       | $\underline{v}$       | $\frac{v}{}$                                     | <u>v</u>                        |
| AB                                   | AB                    | $\stackrel{AB}{\longleftarrow}$                  | $\stackrel{AB}{\longleftarrow}$ |
| $\operatorname{grad}$                | $\operatorname{grad}$ | $\stackrel{\operatorname{grad}}{\longleftarrow}$ | grad                            |
| my long vector                       | my long vector        | my long vector                                   | my long vector                  |

#### \overbar

| rerbar and   | \  |                               |  |  |  |
|--|--|-------------------------------|--|--|--|
|  | Test of \overbar and \overbar* macros  |                               |  |  |  |
| \overbar for different math styles   |  |                               |  |  |  |
| textstyle  | \scriptstyle   | \scriptscriptstyle            |  |  |  |
| $\overline{v}$   | $\overline{v}$   | $\overline{v}$                |  |  |  |
| $\overline{AB}$  | $\overline{AB}$  | $\overline{AB}$               |  |  |  |
| $\overline{\operatorname{grad}}$   | $\overline{\text{grad}}$   | $\overline{\mathrm{grad}}$    |  |  |  |
| long vector  | $\overline{my\ long\ vector}$  | $\overline{my\ long\ vector}$ |  |  |  |
| \overbar kerning   |  |                               |  |  |  |
| $\overline{t}_{\overline{u}_{\overline{v}}} \qquad \overline{\iota}_{0} \qquad \overline{v} = \overline{v}_{x} + \overline{v}_{y} + \overline{v}_{z} = v_x\overline{\iota} + v_y\overline{\jmath} + v_z\overline{k}$ |  |                               |  |  |  |
| \overbar* kerning  |  |                               |  |  |  |
| $\overline{t}_{\overline{u}_{\overline{v}}}$ $\overline{v}_0$ $\overline{v} = \overline{v}_x + \overline{v}_y + \overline{v}_z = v_x \overline{v} + v_y \overline{v} + v_z \overline{k}$                             |  |                               |  |  |  |
|  | textstyle $\overline{v}$ $\overline{AB}$ $\overline{\text{grad}}$ $\overline{long\ vector}$ $\overline{v} = \overline{v}_x + \overline{v}$ $\overline{v}$ $\overline{v}$ | textstyle \scriptstyle        |  |  |  |

#### 17 \underbar

| \TestOverArrow*{und  | derbar}  |  |  |  |  |
|--|--|--|--|--|--|
| Test of \  | underbar and   | \underbar  | * macros                                     |  |  |
| \un  | \underbar for different math styles  |  |  |  |  |
| \displaystyle  | \textstyle   | \scriptstyle                                     | \scriptscriptstyle                           |  |  |
| $\underline{v}$  | $\underline{v}$  | $\underline{v}$                                  | $\underline{v}$                              |  |  |
| $\underline{AB}$   | $\underline{AB}$   | $\underline{AB}$                                 | $\underline{AB}$                             |  |  |
| $\underline{\operatorname{grad}}$  | $\underline{\underline{\text{grad}}}$  | $\underline{\operatorname{grad}}$                | grad   |  |  |
| my long vector   | my long vector   | my long vector                                   | my long vector                               |  |  |
|  | \underbar  | kerning  |  |  |  |
| $t_{\underline{u}_{\underline{v}}}$ $\underline{t}_0$                                | $\underline{t}_{\underline{u}_{\underline{v}}} \qquad \underline{v}_{0} \qquad \underline{v} = \underline{v}_{x} + \underline{v}_{y} + \underline{v}_{z} = v_{x}\underline{\imath} + v_{y}\underline{\jmath} + v_{z}\underline{k}$ |  |  |  |  |
| \underbar* kerning   |  |  |  |  |  |
| $\underline{t}_{\underline{u}_{\underline{v}}}$ $\underline{\imath}_{\underline{v}}$ | $\underline{v} = \underline{v}_x + \underline{v}_x$  | $y + \underline{v}_z = v_x \underline{\imath} +$ | $v_y \underline{\jmath} + v_z \underline{k}$ |  |  |