

Citations with PDF tooltips

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This paper describes package `xcpdftips`
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1 Introduction

This package allows one to be able to do `natbib` citations with PDF tooltips.

2 Invoking the Package

The macros in this package are included in the main document with the `\usepackage` command of $\text{\LaTeX} 2_{\epsilon}$,

```
\documentclass[...]{...}  
\usepackage[\langle options \rangle]{xcpdftips}
```

where [*\langle options \rangle*] is one of: `redefcite`, `ocg`, or `tcolorbox`.

The option `redefcite` replaces `natbib`'s `\cite` with `\xpdfcite`.

The option `ocg` puts tooltips on PDF layers using OCG.

If `ocg` is used and `tcolorbox` is enabled, the package will use `\tcolorbox` instead of `\fcolorbox`.

3 Usage

This package must be used with \LaTeX and `natbib`, not with a hand-written `thebibliography` environment. More precisely, there must be a `.bbl` file external to the \LaTeX file; whether this is written by hand or by \LaTeX is unimportant.

`\xpdfcite` A replacement for `natbib`'s `\cite` macro.

Similarly to `\cite`, the command `\xpdfcite` may take one or two optional arguments to add some text before and after the citation,

```
\xpdfcite{\langle key(s) \rangle}  
\xpdfcite[\langle post \rangle]{\langle key(s) \rangle}  
\xpdfcite[\langle pre \rangle][\langle post \rangle]{\langle key(s) \rangle}
```

4 Caveats

The `xcpdftips` package will work with `natbib` with its native `\bibitem` format, and with standard `LATEX`. It will also work with `url` package.

The OCG support requires `ocgbase` and `pdfbase` versions \geq 2018/04/06. Nothing else can be guaranteed.

5 Options with docstrip

The source `.dtx` file is meant to be processed with `docstrip`, for which a number of options are available:

`package` to produce a `.sty` package file with most comments removed;

`driver` to produce a driver `.drv` file that will print out the documentation under `LATEX 2ε`. The documentation cannot be printed under `LATEX 2.09`.

The source file `xcpdftips.dtx` is itself a driver file and can be processed directly by `LATEX 2ε`.

6 The Coding

This section presents and explains the actual coding of the macros. It is nested between `%<*package>` and `%</package>`, which are indicators to `docstrip` that this coding belongs to the package file.

Package options `redefcite`, `ocg`, `tcolorbox`

```

1 \newif\ifXCP@redefcite\XCP@redefcitefalse
2 \newif\ifXCP@useocg\XCP@useocgfalse
3 \newif\ifXCP@usetcolorbox\XCP@usetcolorboxfalse
4
5 \DeclareOption{redefcite}{\XCP@redefcitetrue}
6 \DeclareOption{ocg}{\XCP@useocgtrue}
7 \DeclareOption{tcolorbox}{\XCP@usetcolorboxtrue}
8
9 \ProcessOptions\relax

```

`\XCP@tooltipbox` Command for creating a tooltip box on the OCG layer. The arguments are the same as for `\fcolorbox`.

```

10 \ifXCP@useocg
11 \ifXCP@usetcolorbox
12 \ifx\tcolorbox\undefined
13 \RequirePackage{tcolorbox}
14 \fi
15 \newcommand{\XCP@tooltipbox}[3]{%
16 \begin{tcolorbox}[colframe=#1, colback=#2,%
17 width=1.02\columnwidth, arc=2pt,%
18 boxsep=2pt, top=0ex, bottom=0ex, left=0.1em, right=0.1em%
19 ]\normalfont\small #3\end{tcolorbox}%
20 }
21 \else

```

```

22 \newcommand{\XCP@tooltipbox}[3]{%
23   \fcolorbox{#1}{#2}%
24   {\parbox[t]{\columnwidth}{\normalfont\small #3}}%
25 }
26 \fi
27 \fi

\XCP@ocgtooltip Usage: \XCP@ocgtooltip{<link text>}[<tooltip box color>]{<tooltip text>}
Warning: Requires pdfbase and ocgbase >= 2018/04/06

28 \ifXCP@useocg
29
30 \RequirePackage{pdfbase,ocgbase}
31
32 \RequirePackage{expl3}
33 \RequirePackage{calc,linegoal}
34 \RequirePackage{xcolor}
35
36 % Check the required versions of pdfbase and ocgbase
37
38 \ExplSyntaxOn
39
40 \msg_set:nnnn{xcpdftips}{support~outdated}{
41   Support~package~‘#1’~too~old.
42 }{
43   Get~an~up~to~date~version~of~‘#1’~\\Aborting.
44 }
45 \@ifpackagelater{pdfbase}{2018/04/06}{}{
46   \msg_error:nnn{xcpdftips}{support~outdated}{pdfbase.sty}
47   \tex_endinput:D
48 }
49 \@ifpackagelater{ocgbase}{2018/04/06}{}{
50   \msg_error:nnn{xcpdftips}{support~outdated}{ocgbase.sty}
51   \tex_endinput:D
52 }
53
54 \let\XCP@pdfLink\pbs_pdflink:nn % Alias for the pdflink from pdfbase
55
56 \ExplSyntaxOff
57
58 % Patch hyperref (make the PDF annotations OCG-aware)
59
60 \ifx\Hy@setpdfborder\undefined\else
61   \let\Hy@setpdfborderOrig\Hy@setpdfborder
62   \def\Hy@setpdfborder{\ocgbase@insert@oc\Hy@setpdfborderOrig}%
63 \fi
64
65 \newsavebox{\XCP@tipText} % Temporary savebox
66 \newlength{\XCP@hOffset} \setlength\XCP@hOffset{-0.1em}
67 \newlength{\XCP@vOffset} \setlength\XCP@vOffset{0.2ex}
68 \newlength{\XCP@lineGoal}
69
70 \NewDocumentCommand{\XCP@ocgtooltip}{%
71   m % link text
72   O{yellow!5} % tooltip box color

```

```

73 m % tooltip text
74 }{{%
75 \leavevmode%
76 % Create a new PDF layer
77 \ocgbase@new@ocg{ref [\XCP@keys]}{%
78 /Print<</PrintState/OFF>> %
79 /Export<</ExportState/OFF>> %
80 /View<</ViewState/OFF>> %
81 }{invisible}%
82 \edef\XCP@currentOcg{\ocgbase@last@ocg}%
83 % Insert the PDF layer into the order hierarchy (shown in the 'Layers' tab)
84 \ocgbase@tree@node@begin%
85 \XCP@currentOcg%
86 \ocgbase@tree@node@end%
87 % Disable the simultaneous visibility of multiple tooltips
88 \ocgbase@add@ocg@to@radiobtn@grp{tool@tips}{\ocgbase@last@ocg}%
89 % Emit the <link text> using \pbs_pdflink:nn
90 \XCP@pdfLink{%
91 /Subtype/Link/Border[0 0 0]/A %
92 <</S/SetOCGState/State [/Toggle \XCP@currentOcg]>> %
93 }{#1}%
94 % Create a savebox for the <tooltip text> on the PDF layer
95 \sbox\XCP@tipText{%
96 \ocgbase@oc@bdc{\XCP@currentOcg}%
97 \ocgbase@open@stack@push{\XCP@currentOcg}%
98 \XCP@tooltipbox{black!50}{#2}{#3}%
99 \ocgbase@oc@emc%
100 \ocgbase@open@stack@pop%
101 \null%
102 }%
103 % Emit the savebox (at this point we have dimensions to calc the offset)
104 \raisebox{%
105 \heightof{#1} + \the\dp\XCP@tipText + \XCP@vOffset%
106 }[0pt][0pt]{%
107 \makebox[0pt][l]{\relax%
108 \setlength\XCP@lineGoal{\linegoal}%
109 \hspace{\dimexpr\XCP@lineGoal - \linewidth + \XCP@hOffset \relax}%
110 \usebox{\XCP@tipText}%
111 }%
112 }%
113 }}
114
115 \fi\XCP@useocg

```

`\XCP@enumeratetips` Gets bibentry for each key from the list of citations. The output is stored into `\XCP@tips`, which can be directly used as a tooltip text in `\pdftooltip`.

```

116 \newsavebox{\XCP@keynum} % Temp box for getting citation numbers using \citenum
117
118 \ExplSyntaxOn
119
120 \NewDocumentCommand{ \XCP@enumeratetips }{%
121 { > { \SplitList , } m }%
122 {%
123 \global\undef\XCP@tips%

```

```

124 \global\undef\XCP@keys%
125 \tl_map_inline:nn {#1}%
126 {%
127   \ifx\XCP@tips\undefined%
128     \global\def\XCP@keys{%
129       \sbox\XCP@keynum{\citenum{##1}}%
130       \expandafter\xdef\csname XCP@k@##1\endcsname{\NAT@num}%
131       \xappto{\XCP@keys}{\NAT@num}%
132     \global\def\XCP@tips{%
133       \gappto{\XCP@tips}{[\textbf{\@nameuse{XCP@k@##1}}]\ %
134         {\@nameuse{BR@r@##1\@extra@b@citeb}}}%
135     \else%
136       \sbox\XCP@keynum{\citenum{##1}}%
137       \expandafter\xdef\csname XCP@k@##1\@extra@b@citeb\endcsname{\NAT@num}%
138       \xappto{\XCP@keys}{,\NAT@num}%
139       \gappto{\XCP@tips}{,\textCR[\textbf{\@nameuse{XCP@k@##1}}]\ %
140         {\@nameuse{BR@r@##1\@extra@b@citeb}}}%
141     \fi%
142   }%
143 }
144
145 \ExplSyntaxOff

```

`\xcsetauthor` Set the author used for pdf comments (default:).

```

146 \gdef\XCP@opt@author{}
147 \newcommand{\xcsetauthor}[1]{\gdef\XCP@opt@author{#1}}

```

`\xcsetmarkup` Set the markup used for pdf comments (default: Underline).

```

148 \gdef\XCP@opt@markup{Underline}
149 \newcommand{\xcsetmarkup}[1]{\gdef\XCP@opt@markup{#1}}

```

`\xcsetcolor` Set the color used for pdf comments (default: yellow).

```

150 \gdef\XCP@opt@color{1 1 0}
151 \newcommand{\xcsetcolor}[1]{\gdef\XCP@opt@color{#1}}

```

`\xcsetopacity` Set the opacity used for pdf comments (default: 0).

```

152 \gdef\XCP@opt@opacity{0}
153 \newcommand{\xcsetopacity}[1]{\gdef\XCP@opt@opacity{#1}}

```

`\XCP@citetp` This macro is in fact `\xpdfcite`.

It is a wrapper for `\XCP@citetp` to handle variable number of arguments.

```

154 \newcommand\XCP@citetp{\ifnextchar[{\XCP@citetp}{\XCP@citetp[]}}
155
156 \newcommand\XCP@citetp{}
157 \def\XCP@citetp[#1]{\ifnextchar[{\XCP@citex[#1]}{\XCP@citex[] [#1]}}

```

`\XCP@citex` An internal macro that does the actual job for `\xpdfcite`.

```

158 \newcommand\XCP@citex{}
159 \gdef\XCP@citex[#1][#2]#3%
160   {%{\protect\NoHyper%
161     \ifXCP@useocg%
162       \let\textCR\par%

```

```

163     \XCP@enumeratetips{#3}%
164     \XCP@ocgtooltip%
165     {{{\protect\NoHyper\XCP@oldcite[#1][#2]{#3}\protect\endNoHyper}}}%
166     {\XCP@tips}%
167   \else%
168     \XCP@enumeratetips{#3}%
169     \pdftooltip{\XCP@oldcite[#1][#2]{#3}}{\XCP@tips}%
170     \pdfmarkupcomment[%
171       author=\XCP@opt@author,%
172       markup=\XCP@opt@markup,%
173       color=\XCP@opt@color,%
174       opacity=\XCP@opt@opacity,%
175       ]{\vphantom{.}}{\XCP@tips}%
176   \fi%
177   }%\protect\endNoHyper}}
178
179 \let\XCP@oldcite\citep % Save \citep (in the case if it becomes redefined)

\xpdcite A wrapper for \citep + \pdftooltip. It has the same syntax as \citep.
180 \let\xpdcite\XCP@citetp
181 \robustify{\xpdcite}
182
183 \AtBeginDocument{\nobibliography*} % Necessary to get bibentries.
184
185 \ifXCP@redefcite % Override \cite
186   \let\cite\xpdcite
187   \robustify{\cite} % Required for, e.g., captions
188 \fi

```