Citations with PDF tooltips

Mikica Kocic

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 LaTeX 2_ε,

```
\documentclass[..]{...}
\usepackage{xcpdftips}
```

It is also possible to replace `\cite`:

```
\usepackage[redefcite]{xcpdftips}
```

To put tooltips on the PDF layers (OCG):

```
\usepackage[redefcite,useocg]{xcpdftips}
```

3 Usage

This package must be used with BibTeX 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 BibTeX is unimportant.

`\xpdfcite`   This is a replacement for `natbib`'s `\cite` macro. Usage is the same:

```
\xpdfcite{⟨key(s)⟩}
```

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

4 Caveats

The `xcpdftips` package will work with `natbib` with its native `\bibitem` format, and with standard LaTeX. Nothing else can be guaranteed. It will also work with `url` package.

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.

`\DeclareOption` Defined options: `redefcite`, `useocg`, `usetcolorbox`

```
 1
 2 \newif\if@useocg\@useocgfalse
 3 \newif\if@usetcolorbox\@usetcolorboxfalse
 4 \newif\if@redefcite\@redefcitefalse
 5
 6 \DeclareOption{useocg}{\@useocgtrue}
 7 \DeclareOption{usetcolorbox}{\@usetcolorboxtrue}
 8 \DeclareOption{redefcite}{\@redefcitetrue}
 9
10 \ProcessOptions\relax
11
```

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

```
12
13 \if@useocg %%% BEGIN use OCG %%%
14
15 \RequirePackage{pdfbase,ocgbase}
16
17 \RequirePackage{xparse}
18 \RequirePackage{expl3}
19 \RequirePackage{calc,linegoal}
20 \RequirePackage{xcolor}
21
22 % Check the required versions of pdfbase and ocgbase
23
24 \ExplSyntaxOn
25
26 \msg_set:nnnn{xcpdftips}{support~outdated}{
27   Support~package~'#1'~too~old.
28 }{
29   Get~an~up~to~date~version~of~'#1'.\\Aborting.
```

```
30 }
31 \@ifpackagelater{pdfbase}{2018/04/06}{}{
32   \msg_error:nnn{xcpdftips}{support~outdated}{pdfbase.sty}
33   \tex_endinput:D
34 }
35 \@ifpackagelater{ocgbase}{2018/04/06}{}{
36   \msg_error:nnn{xcpdftips}{support~outdated}{ocgbase.sty}
37   \tex_endinput:D
38 }
39
40 \let\XCP@pdfLink\pbs_pdflink:nn  % Alias for the pdflink from pdfbase
41
42 \ExplSyntaxOff
43
44 % Patch hyperref (make the PDF annotations OCG-aware)
45
46 \let\Hy@setpdfborderOrig\Hy@setpdfborder
47 \def\Hy@setpdfborder{\ocgbase@insert@oc\Hy@setpdfborderOrig}%
48
49 % Define savebox, counters and lengths
50
51 \newsavebox{\XCP@tipText}
52
53 \newcounter{XCP@tipn}
54
55 \newlength{\XCP@hOffset} \setlength\XCP@hOffset{-0.1em}
56 \newlength{\XCP@vOffset} \setlength\XCP@vOffset{0.2ex}
57 \newlength{\XCP@lineGoal}
58
59 % Command for showing tooltips. The arguments are the same as for \fcolorbox.
60
61 \if@usetcolorbox%
62   \RequirePackage{tcolorbox}
63   \newcommand{\ocgtoolbox}[3]{%
64     \begin{tcolorbox}[colframe=#1, colback=#2,%
65         width=1.02\columnwidth, arc=2pt,%
66         boxsep=2pt, top=0ex, bottom=0ex, left=0.1em, right=0.1em%
67     ]\normalfont\small #3\end{tcolorbox}%
68   }
69 \else%
70   \newcommand{\ocgtoolbox}[3]{%
71     \fcolorbox{#1}{#2}%
72       {\parbox[t]{\columnwidth}{\normalfont\small #3}}%
73   }
74 \fi
75
76 \NewDocumentCommand{\XCP@ocgtooltip}{%
77   m % link text
78   O{yellow!5} % tooltip box color
79   m % tooltip text
80 }{{%
81   \leavevmode%
82   % Create a new PDF layer
83   \stepcounter{XCP@tipn}%
```

```
84   \ocgbase@new@ocg{ref [\XCP@keys]}{%
85     /Print<</PrintState/OFF>> %
86     /Export<</ExportState/OFF>> %
87     /View<</ViewState/OFF>> %
88   }{invisible}%
89   \edef\XCP@currentOcg{\ocgbase@last@ocg}%
90   % Insert the PDF layer into the order hierarchy (shown in the 'Layers' tab)
91   \ocgbase@tree@node@begin%
92   \XCP@currentOcg%
93   \ocgbase@tree@node@end%
94   % Disable the simultaneous visibility of multiple tooltips
95   \ocgbase@add@ocg@to@radiobtn@grp{tool@tips}{\ocgbase@last@ocg}%
96   % Emit the <link text> using \pbs_pdflink:nn
97   \XCP@pdfLink{%
98     /Subtype/Link/Border[0 0 0]/A %
99       <</S/SetOCGState/State [/Toggle \XCP@currentOcg]>> %
100  }{#1}%
101  % Create a savebox for the <tooltip text> on the PDF layer
102  \sbox\XCP@tipText{%
103    \ocgbase@oc@bdc{\XCP@currentOcg}%
104    \ocgbase@open@stack@push{\XCP@currentOcg}%
105      \ocgtoolbox{black!50}{#2}{#3}%
106    \ocgbase@oc@emc%
107    \ocgbase@open@stack@pop%
108    \null%
109  }%
110  % Emit the savebox (at this point we have dimensions to calc the offset)
111  \raisebox{%
112    \heightof{#1} + \the\dp\XCP@tipText + \XCP@vOffset%
113  }[0pt][0pt]{%
114    \makebox[0pt][l]{\relax%
115      \setlength\XCP@lineGoal{\linegoal}%
116      \hspace{\dimexpr\XCP@lineGoal - \linewidth + \XCP@hOffset \relax}%
117      \usebox{\XCP@tipText}%
118    }%
119  }%
120 }}
121
122 \fi %%% END use OCG %%%
123
```

\XCP@enumeratetips The macro \XCP@enumeratetips gets bibentry for each key from the list of ci-
tations. The output is stored into \XCP@tips, which can be directly used as a
tooltip text in \pdftooltip.

```
124
125 \newsavebox{\XCP@keynum} % Temp box for getting citation numbers using \citenum
126
127 \ExplSyntaxOn
128
129 \NewDocumentCommand{ \XCP@enumeratetips }%
130 { > { \SplitList , } m }%
131 {%
132   \global\undef\XCP@tips%
133   \global\undef\XCP@keys%
```

```
134    \tl_map_inline:nn {#1}%
135    {%
136      \ifx\XCP@tips\undefined%
137        \global\def\XCP@keys{}%
138        \sbox\XCP@keynum{\citenum{##1}}%
139        \expandafter\xdef\csname XCP@k@##1\endcsname{\NAT@num}%
140        \xappto{\XCP@keys}{\NAT@num}%
141        \global\def\XCP@tips{}%
142        \gappto{\XCP@tips}{[\textbf{\@nameuse{XCP@k@##1}}]\ %
143          {\@nameuse{BR@r@##1\@extra@b@citeb}}}%
144      \else%
145        \sbox\XCP@keynum{\citenum{##1}}%
146        \expandafter\xdef\csname XCP@k@##1\@extra@b@citeb\endcsname{\NAT@num}%
147        \xappto{\XCP@keys}{,\NAT@num}%
148        \gappto{\XCP@tips}{,\textCR[\textbf{\@nameuse{XCP@k@##1}}]\ %
149          {\@nameuse{BR@r@##1\@extra@b@citeb}}}%
150      \fi%
151    }%
152 }
153
154 \ExplSyntaxOff
155
```

\xcsetauthor This commands sets the author used for pdf comments (default:).

```
156
157 \gdef\XCP@opt@author{{}}
158 \newcommand{\xcsetauthor}[1]{\gdef\XCP@opt@author{#1}}
159
```

\xcsetmarkup This commands sets the markup used for pdf comments (default: Underline).

```
160
161 \gdef\XCP@opt@markup{Underline}
162 \newcommand{\xcsetmarkup}[1]{\gdef\XCP@opt@markup{#1}}
163
```

\xcsetcolor This commands sets the color used for pdf comments (default: yellow).

```
164
165 \gdef\XCP@opt@color{1 1 0}
166 \newcommand{\xcsetcolor}[1]{\gdef\XCP@opt@color{#1}}
167
```

\XCP@opt@opacity This commands sets the opacity used for pdf comments (default: 0).

```
168
169 \gdef\XCP@opt@opacity{0}
170 \newcommand{\xcsetopacity}[1]{\gdef\XCP@opt@opacity{#1}}
171
```

\XCP@citetp This macro is in fact \xpdfcite.
It is a wrapper for \XCP@@citetp to handle variable number of arguments.

```
172
173 \newcommand\XCP@citetp{\@ifnextchar[{\XCP@@citetp}{\XCP@@citetp[]}}
174
```

\XCP@@citetp This macro is called from \xpdfcite.
It is a wrapper for \XCP@citex to handle variable number of arguments.

```
175
176 \newcommand\XCP@@citetp{}
177
178 \def\XCP@@citetp[#1]{\@ifnextchar[{\XCP@citex[#1]}{\XCP@citex[][#1]}}
179
```

\XCP@citex This is an internal macro that does the job of \xpdfcite. It combines \citep
with \pdftooltip and \pdfmarkupcomment.

```
180
181 \newcommand\XCP@citex{}
182
183 \def\XCP@citex[#1][#2]#3%
184   {%{\protect\NoHyper%
185     \if@useocg%
186       \let\textCR\par%
187       \XCP@enumeratetips{#3}%
188       \XCP@ocgtooltip%
189         {{{\protect\NoHyper\XCP@oldcite[#1][#2]{#3}\protect\endNoHyper}}}%
190         {\XCP@tips}%
191     \else%
192       \XCP@enumeratetips{#3}%
193       \pdftooltip{\XCP@oldcite[#1][#2]{#3}}{\XCP@tips}%
194       \pdfmarkupcomment[%
195         author=\XCP@opt@author,%
196         markup=\XCP@opt@markup,%
197         color=\XCP@opt@color,%
198         opacity=\XCP@opt@opacity,%
199       ]{\vphantom{.}}{\XCP@tips}%
200     \fi%
201   }%\protect\endNoHyper}}
202
203 \let\XCP@oldcite\citep  % Save \citep (in the case if it becomes redefined)
204
```

\xpdfcite A wrapper for the combined \pdftooltip and \citep.
It has the same syntax as \citep.

```
205
206 \let\xpdfcite\XCP@citetp
207 \robustify{\xpdfcite}
208
209 \AtBeginDocument{\nobibliography*} % Necessary to get bibentries.
210
211 \if@redefcite % Override \cite
212   \let\cite\xpdfcite
213   \robustify{\cite} % Required for \cite in captions
214 \fi
215
```