exporting-accented-characters

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1 Exporting accented characters to latex from org-mode

I noticed recently in writing a technical paper in org-mode that I had some trouble exporting some accented characters to LaTeX.

Here are 5 words that render correctly in LaTeX

```
1. Jos\'{e}
2. peque\~{n}o
3. Gro\ss
4. Gr\"{u}neisen
5. N\o{}rskov
```

Here we wrap these words in a LaTeX block so it exports verbatim to see how they look in a PDF.

José
pequeño
Groß
Grüneisen
Nørskov
Now, we use the same characters in org-mode.

1. Jos\'{e}
2. peque\~{n}o
3. Groß
4. Gr\"{u}neisen
5. Nørskov

The exported LaTeX code looks like:

```
\begin{enumerate}
\item Jos$\backslash$'\{e\}
\item peque$\backslash$\textasciitilde{}\{n\}o
\item Gro\ss
\item Gr$\backslash$"\{u\}neisen
\item N\o{}rskov
\end{enumerate}
```

The exporter does not handle all of them correctly. Org-mode is its own system, and it is not, and won't be a total replacement for LaTeX. Nevertheless, these are pretty common characters for me, and We need a solution! A clunky way we found to solve this is to add a LATEX$_{\text{HEADER}}$ line that defines a new LaTeX command like this:

```
#+LATEX_HEADER: \newcommand{\gruneisen}{Gr\"{u}neisen}
```

Then you can use the new command in org-mode. So this text:

```
We use \gruneisen in a sentence.
```

Renders like this:
We use in a sentence.

That is not too ideal, since some journals do not like you to define new commands. It turns out that org-mode has its own commands to solve this problem! There is a list of these commands stored in a variable called `org-entities`.

Here we print these entities for "the record". I add an extra star to the data in org-entities so they will all be nested in this post.

[frame=lines,fontsize=,linenos]common-lisp (mapcar (lambda(x) "print element x. If it is a heading, add an extra star" (interactive) (if (and (stringp x) (string= (substring x 0 1) "*")) (princ (format "*(princ (format "

1.1 Letters

1.1.1 Latin

(Agrave \‘{A} nil À A À À) (agrave \‘{a} nil à a à à) (Aacute \’{A} nil Á A Á Á) (aacute \’{a} nil á a á á) (Acirc \$^{A}$ nil Â A Â Â) (acirc \$^{a}$ nil â a â â) (Atilde \~{A} nil Ã A Ã Ã) (atilde \~{a} nil ã a ã ã) (Auml \"{A} nil Ä Ae Ä Ä) (auml \"{a} nil ä ae ä ä) (Aring Å nil Å A Å Å) (AA Å nil Å A Å Å) (aring å nil å a å å) (AElig Æ nil Æ AE Æ Æ) (aelig æ nil æ ae æ æ) (Ccedil Ç nil Ç C Ç Ç) (ccedil ç nil ç c ç ç) (Egrave \‘{E} nil È E È È) (egrave \‘{e} nil è e è è) (Eacute \’{E} nil É E É É) (eacute \’{e} nil é e é é) (Ecirc \$^{E}$ nil Ê E Ê Ê) (ecirc \$^{e}$ nil ê e ê ê) (Euml \"{E} nil Ë E Ë Ë) (euml \"{e} nil ë e ë ë) (Igrave \‘{I} nil Ì I Ì Ì) (igrave \‘{i} nil ì i ì ì) (Iacute \’{I} nil Í I Í Í) (iacute \’{i} nil í i í í) (Icirc \$^{I}$ nil Î I Î Î) (icirc \$^{i}$ nil î i î î) (Iuml \"{I} nil Ï I Ï Ï) (iuml \"{i} nil ï i ï ï) (Ntilde \~{N} nil Ñ N Ñ Ñ) (ntilde

\~{n} nil ñ n ñ ñ) (Ograve \‘{O} nil Ò O Ò Ò) (ograve \‘{o} nil ò o ò ò) (Oacute \’{O} nil Ó O Ó Ó) (oacute \’{o} nil ó o ó ó) (Ocirc \^{O} nil Ô O Ô Ô) (ocirc \^{o} nil ô o ô ô) (Otilde \~{O} nil Õ O Õ Õ) (otilde \~{o} nil õ o õ õ) (Ouml \"{O} nil Ö Oe Ö Ö) (ouml \"{o} nil ö oe ö ö) (Oslash Ønil Ø O Ø Ø) (oslash ø nil ø o ø ø) (OElig Œ nil Œ OE OE Œ) (oelig œ nil œ oe oe œ) (Scaron Š nil Š S S Š) (scaron š nil š s s š) (szlig ß nil ß ss ß ß) (Ugrave \‘{U} nil Ù U Ù Ù) (ugrave \‘{u} nil ù u ù ù) (Uacute \’{U} nil Ú U Ú Ú) (uacute \’{u} nil ú u ú ú) (Ucirc \^{U} nil Û U Û Û) (ucirc \^{u} nil û u û û) (Uuml \"{U} nil Ü Ue Ü Ü) (uuml \"{u} nil ü ue ü ü) (Yacute \’{Y} nil Ý Y Ý Ý) (yacute \’{y} nil ý y ý ý) (Yuml \"{Y} nil Ÿ Y Y Ÿ) (yuml \"{y} nil ÿ y ÿ ÿ)

1.1.2 Latin (special face)

(fnof f nil ƒ f f f) (real $\Re t$&$real$; RR)($image\Im t$&$image$; II)($weierp\wp t$&$weierp$; PP)

1.1.3 Greek

(Alpha A nil Α Alpha Alpha) (alpha α t α alpha alpha) (Beta B nil Β Beta Beta) (beta β t β beta beta) (Gamma Γ t Γ Gamma Gamma) (gamma γ t γ gamma gamma) (Delta Δ t Δ Delta Gamma) (delta δ t δ delta delta) (Epsilon E nil Ε Epsilon Epsilon) (epsilon ϵ t ε epsilon epsilon) (varepsilon ε t ε varepsilon varepsilon) (Zeta Z nil Ζ Zeta Zeta) (zeta ζ t ζ zeta zeta) (Eta H nil Η Eta Eta) (eta η t η eta eta) (Theta Θ t Θ Theta Theta) (theta θ t θ theta theta) (thetasym ϑ t ϑ theta theta) (vartheta ϑ t ϑ theta theta) (Iota I nil Ι Iota Iota) (iota ι t ι iota iota) (Kappa K nil Κ Kappa Kappa) (kappa κ t κ kappa kappa) (Lambda Λ t Λ Lambda Lambda) (lambda λ t λ lambda lambda) (Mu M nil Μ Mu Mu) (mu μ t μ mu mu) (nu ν t ν nu nu) (Nu N nil Ν Nu Nu) (Xi Ξ t Ξ Xi Xi) (xi ξ t ξ xi xi) (Omicron O nil Ο Omicron Omicron) (omicron o nil ο omicron omicron) (Pi Π t Π Pi Pi) (pi π t π pi pi) (Rho P nil Ρ Rho Rho) (rho ρ t ρ rho rho) (Sigma Σ t Σ Sigma Sigma) (sigma σ t σ sigma sigma) (sigmaf ς t ς sigmaf sigmaf) (varsigma ς t ς varsigma varsigma) (Tau T nil Τ Tau Tau) (Upsilon Υ t Υ Upsilon Upsilon) (upsih Υ t ϒ upsilon upsilon) (upsilon υ t υ

upsilon upsilon) (Phi Φ t Φ Phi Phi) (phi ϕ t φ phi phi) (Chi X nil Χ Chi Chi) (chi χ t χ chi chi) (acutex ´ x t ´x 'x 'x) (Psi Ψ t Ψ Psi Psi) (psi ψ t ψ psi psi) (tau τ t τ tau tau) (Omega Ω t Ω Omega Omega) (omega ω t ω omega omega) (piv $\varpi t\ϖ omega - piomega - pi)(partial\partial$ t ∂ [partial differential] [partial differential])

1.1.4 Hebrew

(alefsym $\aleph t\ℵ alephaleph$)

1.1.5 Dead languages

(ETH Ð nil Ð D Ð Ð) (eth ð nil ð dh ð ð) (THORN Þ nil Þ TH Þ Þ) (thorn þ nil þ th þ þ)

1.2 Punctuation

1.2.1 Dots and Marks

(dots ... nil … ... ...) (hellip ... nil … ... ...) (middot · nil · . · ·) (iexcl ¡ nil ¡ ! ¡ ¡) (iquest ¿ nil ¿ ? ¿ ¿)

1.2.2 Dash-like

(shy nil) (ndash – nil – - - –) (mdash — nil — – – —)

1.2.3 Quotations

(quot " nil " " " ") (acute ´ nil ´ ' ´ ´) (ldquo “ nil “ " " “) (rdquo ” nil ” " " ”) (bdquo „ nil „ " " „) (lsquo ‘ nil ‘ ‘ ‘ ‘) (rsquo ’ nil ’ ' ' ') (sbquo ‚ nil ‚ , , ,) (laquo « nil « « « «) (raquo » nil » » » ») (lsaquo ‹ nil ‹ < < ‹) (rsaquo › nil › > > ›)

1.3 Other

1.3.1 Misc. (often used)

(circ \ nil ˆ ^ ^ ^) (vert | t | | | |) (brvbar ¦ nil ¦ | ¦ ¦) (sect §nil § paragraph § §) (amp & nil & & & &) (lt < nil < < < <) (gt > nil > > > >) (tilde \~{} nil ˜ ~ ~ ~) (slash / nil / /

/ /) (plus + nil + + + +) (under _ nil _ _ _ _) (equal = nil = = = =) (asciicirc ^ nil ^ ^ ^ ^) (dagger † nil † [dagger] [dagger] †) (Dagger ‡ nil ‡ [doubledagger] [doubledagger] ‡)

1.3.2 Whitespace

(nbsp ~ nil   ) (ensp nil   ) (emsp nil   ) (thinsp nil   )

1.3.3 Currency

(curren ¤ nil ¤ curr. ¤ ¤) (cent ¢ nil ¢ cent ¢ ¢) (pound £ nil £ pound £ £) (yen ¥ nil ¥ yen ¥ ¥) (euro € nil € EUR EUR €) (EUR € nil € EUR EUR €) (EURdig € nil € EUR EUR €) (EURhv € nil € EUR EUR €) (EURcr € nil € EUR EUR €) (EURtm € nil € EUR EUR €)

1.3.4 Property Marks

(copy © nil © (c) © ©) (reg ® nil ® (r) ® ®) (trade ™ nil ™ TM TM ™)

1.3.5 Science et al.

(minus t − - -) (pm ± nil ± +- ± ±) (plusmn ± nil ± +- ± ±) (times × nil × * × ×) (frasl / nil ⁄ / / /) (div ÷ nil ÷ / ÷ ÷) (frac12 ½ nil ½ 1/2 ½ ½) (frac14 ¼ nil ¼ 1/4 ¼ ¼) (frac34 ¾ nil ¾ 3/4 ¾ ¾) (permil ‰ nil ‰ per thousand per thousand ‰) (sup1 ¹ nil ¹ ^1 ¹ ¹) (sup2 ² nil ² ^2 ² ²) (sup3 ³ nil ³ ^3 ³ ³) (radic $\surd$t&*radic*;[*squareroot*][*squareroot*])(*sum*$\sum$ t ∑ [sum] [sum]) (prod $\prod$ t ∏ [product] [n-ary product]) (micro µ nil µ micro µ µ) (macr ¯ nil ¯ [macron] ¯ ¯) (deg ° nil ° degree ° °) (prime ′ t ′ ' ') (Prime ″ t ″ " ") (infin ∝ t&*infin*;[*infinity*][*infinity*])(*infty*∞ t ∞ [infinity] [infinity]) (prop ∝ t&*prop*;[*proportionalto*][*proportionalto*])(*proptp* ∝ t&*prop*;[*proportionalto*][*proportionalto*])(*notnil*&*not*;[*angleddash*])(*neg*¬ t ¬ [angled dash] ¬ ¬) (land ∧ t ∧ [logical and] [logical and]) (wedge ∧ t ∧ [logical and] [logical and]) (lor ∨ t ∨ [logical or] [logical or]) (vee ∨ t ∨ [logical or] [logical or]) (cap ∩ t ∩ [intersection] [intersection]) (cup ∪ t ∪ [union] [union]) (int ∫ t ∫ [integral] [integral]) (there4 ∴ t&*there*4;[*therefore*][*therefore*])(*sim*∼ t ∼ ~ ~

) (cong ≅ t ≅ [approx. equal to] [approx. equal to]) (simeq ≃ t ≅ [approx. equal to] [approx. equal to]) (asymp ≍ t ≈ [almost equal to] [almost equal to]) (approx ≈ t ≈ [almost equal to] [almost equal to]) (ne ≠ t ≠ [not equal to] [not equal to]) (neq ≠ t ≠ [not equal to] [not equal to]) (equiv ≡ t ≡ [identical to] [identical to]) (le ≤ t ≤ <= <=) (ge ≥ t ≥ >= >=) (sub ⊂ t ⊂ [subset of] [subset of]) (subset ⊂ t ⊂ [subset of] [subset of]) (sup ⊃ t ⊃ [superset of] [superset of]) (supset ⊃ t ⊃ [superset of] [superset of]) (nsub ¬⊂ t ⊄ [not a subset of] [not a subset of) (sube ⊆ $t\&sube$; [$subsetoforequalto$][$subsetoforequalto$])($nsup\supset$ t ⊅ [not a superset of] [not a superset of]) (supe ⊇ $t\&supe$; [$supersetoforequalto$][$supersetoforequalto$])($forall\forall$ t ∀ [for all] [for all]) (exist ∃ t ∃ [there exists] [there exists]) (exists ∃ t ∃ [there exists] [there exists]) (empty t ∅ [empty set] [empty set]) (emptyset ∅ t ∅ [empty set] [empty set]) (isin ∈ t ∈ [element of] [element of]) (in ∈ t ∈ [element of] [element of]) (notin ∉ t ∉ [not an element of] [not an element of]) (ni ∋ t ∋ [contains as member] [contains as member]) (nabla ∇ t ∇ [nabla] [nabla]) (ang ∠ t ∠ [angle] [angle]) (angle ∠ t ∠ [angle] [angle]) (perp ⊥ t ⊥ [up tack] [up tack]) (sdot · t ⋅ [dot] [dot]) (cdot · t ⋅ [dot] [dot]) (lceil ⌈ t ⌈ [left ceiling] [left ceiling]) (rceil ⌉ t ⌉ [right ceiling] [right ceiling]) (lfloor ⌊ t ⌊ [left floor] [left floor]) (rfloor ⌋ t ⌋ [right floor] [right floor]) (lang $\langle t\&lang$; <<)($rang\rangle t\&rang$; >>)($hbar\hbar$ t ℏ hbar hbar)

1.3.6 Arrows

(larr ← t ← <- <- ←) (leftarrow ← t ← <- <- ←) (gets ← t ← <- <- ←) (lArr ⇐ t ⇐ <= <=) (Leftarrow ⇐ t ⇐ <= <=) (uarr ↑ t ↑ [uparrow] [uparrow] ↑) (uparrow ↑ t ↑ [uparrow] [uparrow] ↑) (uArr ⇑ t ⇑ [dbluparrow] [dbluparrow]) (Uparrow ⇑ t ⇑ [dbluparrow] [dbluparrow]) (rarr → t → -> -> →) (to → t → -> -> →) (rightarrow → t → -> -> →) (rArr ⇒ t ⇒ => =>) (Rightarrow ⇒ t ⇒ => =>) (darr ↓ t ↓ [downarrow] [downarrow] ↓) (downarrow ↓ t ↓ [downarrow] [downarrow] ↓) (dArr ⇓ t ⇓ [dbldownarrow] [dbldownarrow]) (Downarrow ⇓ t ⇓ [dbldownarrow] [dbldownarrow]) (harr ↔ t ↔ <-> <->) (leftrightarrow ↔ t ↔ <-> <->) (hArr ⇔ t ⇔ <=> <=>) (Leftrightarrow ⇔ t ⇔ <=> <=>) (crarr ↵ t ↵ <-’ <-’) (hookleftarrow ↩ t ↵ <-’ <-’)

1.3.7 Function names

(arccos arccos t arccos arccos arccos arccos) (arcsin arcsin t arcsin arcsin arcsin arcsin) (arctan arctan t arctan arctan arctan arctan) (arg arg t arg arg arg arg) (cos cos t cos cos cos cos) (cosh cosh t cosh cosh cosh cosh) (cot cot t cot cot cot cot) (coth coth t coth coth coth coth) (csc csc t csc csc csc csc) (deg ° t ° deg deg deg) (det det t det det det det) (dim dim t dim dim dim dim) (exp exp t exp exp exp exp) (gcd gcd t gcd gcd gcd gcd) (hom hom t hom hom hom hom) (inf inf t inf inf inf inf) (ker ker t ker ker ker ker) (lg lg t lg lg lg lg) (lim lim t lim lim lim lim) (liminf lim inf t liminf liminf liminf liminf) (limsup lim sup t limsup limsup limsup limsup) (ln ln t ln ln ln ln) (log log t log log log log) (max max t max max max max) (min min t min min min min) (Pr Pr t Pr Pr Pr Pr) (sec sec t sec sec sec sec) (sin sin t sin sin sin sin) (sinh sinh t sinh sinh sinh sinh) (sup ⊃ t ⊃ sup sup sup) (tan tan t tan tan tan tan) (tanh tanh t tanh tanh tanh tanh)

1.3.8 Signs & Symbols

(bull • nil • * * •) (bullet • nil • * * •) (star ⋆ t * * *) (lowast ∗ t ∗ * *) (ast ∗ t ∗ * * *) (odot ⊙ t o [circled dot] [circled dot]) (oplus ⊕ t ⊕ [circled plus] [circled plus]) (otimes ⊗ t ⊗ [circled times] [circled times]) (checkmark ✓ t ✓ [checkmark] [checkmark])

1.3.9 Miscellaneous (seldom used)

(para ¶ nil ¶ [pilcrow] ¶ ¶) (ordf $\underline{^{a}}$ nil ª $\underline{a}$ $\underline{^{a}}$ $\underline{^{a}}$) (ordm $\underline{^{o}}$ nil º $\underline{o}$ $\underline{^{o}}$ $\underline{^{o}}$) (cedil ¸nil ¸ [cedilla] ¸ ¸) (oline ‾*t*&*oline*; [*overline*])(*umlnil*&*uml*; [*diaeresis*])(*zwnj*\/{} nil ‌) (zwj nil ‍) (lrm nil ‎) (rlm nil ‏)

1.3.10 Smilies

(smile ‿ t ☺ :-) :-)) (smiley ☺ nil ☺ :-) :-)) (blacksmile ☻ nil ☻ :-) :-)) (sad ☹ nil ☹ :-(:-( )

1.3.11 Suits

(clubs ♣ t ♣ [clubs] [clubs]) (clubsuit ♣ t ♣ [clubs] [clubs]) (spades ♠ t ♠ [spades] [spades]) (spadesuit ♠ t ♠ [spades] [spades]) (hearts ♡ t ♥ [hearts] [hearts]) (heartsuit ♡ t ♥ [hearts] [hearts]) (diams ♢ t ♦ [diamonds] [diamonds]) (diamondsuit ♢ t ♦ [diamonds] [diamonds]) (Diamond ⋄*t*&*diamond*; [*diamond*][*diamond*])(*loz* ◊ *t*&*loz*; [*lozenge*][*lozenge*])

1.4 Summary.

Wow, there are a lot of commands $\smile$. We just need to use them. For example, I can write Grüneisen, and it finally renders the way it should!