Cassiopeia 2.3.6 ReleaseNotes

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1 Boxed equations

Earlier releases of Cassiopeia already had rudimentary support for boxed equations. However, boxes were visible only in the generated PDF (LaTeX) not already in the Cassiopeia document. Full support for boxed equations is available as of v2.3.6.

Enter any equation like the following by pressing Command-y to insert an equation and then typing d i v A Ctrl-a v <Cursur-Up>, <Cursor-Right> = l i m ...

$$\text{div } \vec{A} \quad = \quad \lim_{V \to 0} \frac{1}{V} \int \vec{A} \, d\vec{S}$$

Then Command-Shift-Double-click on the equation to open the equation inspector.
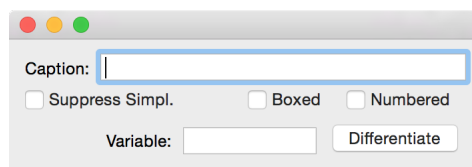
and check the *Boxed* control. The equation in the Cassiopeia document is redrawn as follows.

$$\boxed{\text{div } \vec{A} \quad = \quad \lim_{V \to 0} \frac{1}{V} \int \vec{A} \, d\vec{S}}$$

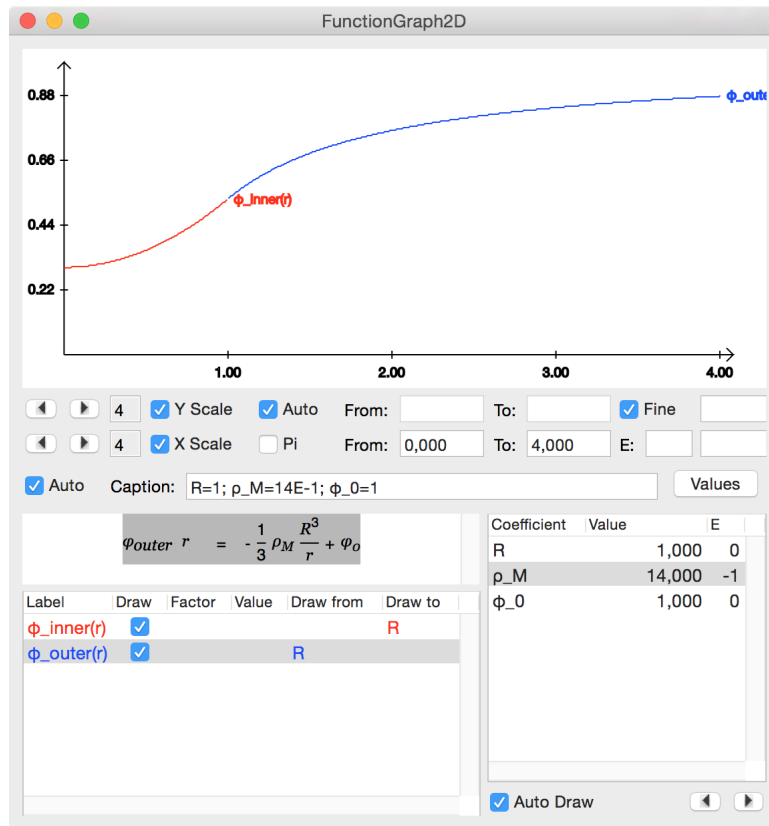If you additionally check the *Numbered* control the equation will look as follows.

$$\boxed{\operatorname{div} \vec{A} \quad = \quad \lim_{V \to 0} \frac{1}{V} \int \vec{A}\, d\vec{S}}$$

(3)

2 Draw Ranges

The function plotter supports draw ranges now. This feature is extremely useful for handling problems that require distinct functions for distinct parameter ranges. Let's assume we have determined the following two functions for the gravitational potential of a star.

$$\varphi_{inner}(r) \quad = \quad \frac{1}{6} \rho_M\, r^2 - \frac{1}{2} \rho_M\, R^2 + \varphi_o$$

$$\varphi_{outer}(r) \quad = \quad -\frac{1}{3} \rho_M\, \frac{R^3}{r} + \varphi_o$$

The first function describes the potential within the star for $r \leq R$, the second the potential outside of the star for $r \geq R$. We can now insert a function graph into the document, drag the two functions onto it (see documentation for details) and then specify plot ranges for the two functions.

FunctionGraph2D

0.88

0.66

0.44

0.22

φ_outer

φ_Inner(r)

1.00 2.00 3.00 4.00

◀ ▶ 4 ☑ Y Scale ☑ Auto From: ☐ To: ☐ ☑ Fine ☐
◀ ▶ 4 ☑ X Scale ☐ Pi From: 0,000 To: 4,000 E: ☐ ☐

☑ Auto Caption: R=1; ρ_M=14E-1; φ_0=1 | Values |

$$\varphi_{outer}\ ^r\quad =\quad -\frac{1}{3}\rho_M\frac{R^3}{r} + \varphi_o$$

Coefficient	Value	E
R	1,000	0
ρ_M	14,000	-1
φ_0	1,000	0

| Label	Draw	Factor	Value	Draw from	Draw to
φ_inner(r)	☑				R
φ_outer(r)	☑			R	

☑ Auto Draw ◀ ▶

The entry on R in the *Draw to* column causes the Cassiopeia to plot the first function between 0 and R only. The R in the *Draw from* column causes Cassiopeia to plot the second function for $r \geq R$ only. This gives as one smooth plot for the whole plotted range. Assigning colors to the functions additionally helps to get a good idea of the physical problem. We can now play with the coefficients (increase and decrease them) by making use of the two arrow buttons in the bottom right corner and continuously get a meaningful plot even when altering the radius R of the star.

3 Title Page

The title page inspector got a couple of new fields. Opening any Cassiopeia document and pressing Command-p raises the print panel.
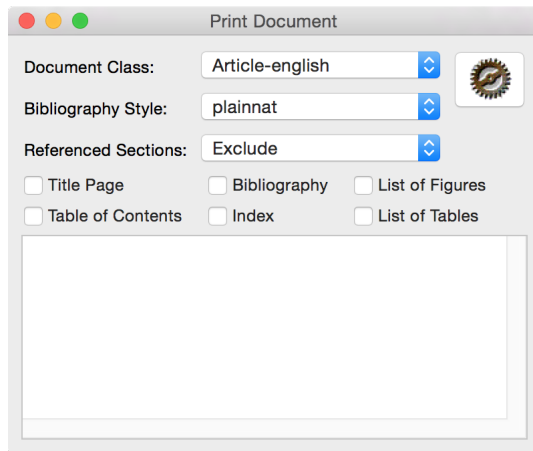
Clicking on the *Title Page* control opens the title page inspector and allows to enter the usual properties of a title page.
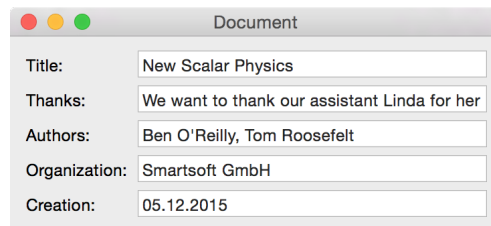
Generating LaTeX (clicking on the brown wheel) then gives as the expected title page:
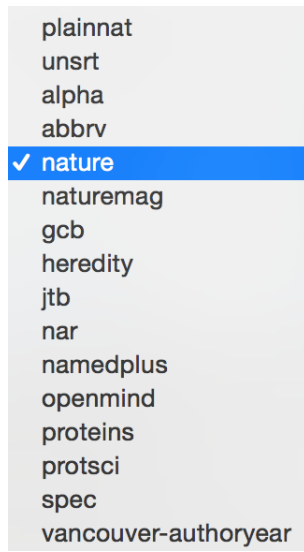
New Scalar Physics[1]

Ben O'Reilly, Tom Roosefelt
Smartsoft GmbH

05 Dec 2015

4   Bibliography styles

A bunch of new bibliography styles were added to the print latex panel. The Bibliography Style popup now offers

allowing reference lists in the generated PDF to look as follows (or similar depending of the chosen style).

References

[1] Berger, A.
Electrodynamics.
Analen der Physik (2), 112–114, 1 (1992).