Jumping to a Rectangular Region

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Introduction. This document demonstrates a technique designed to help people with low vision read material by providing them with a convenient way to magnify specific regions of the document. This is especially useful for reading technical material such as mathematics, as is demonstrated here.

Instructions: Click on any of the mathematics to magnify a region around it, the border will blink briefly to focus your attention on it. To restore the previous view, click on the region again, the formula is briefly highlighted by a blinking border so can quickly find your place in the document.

Sample Mathematical Text. Consider the problem of numerically solving the first order differential equation $y' = f(t, y)$ on $[t_{start}, t_{end}]$. Suppose we want to classify third order Runge-Kutta type methods. Start with

$$\begin{aligned} K_1 &= hf(t_n, y_n) \\ K_2 &= hf(t_n + rh, y_n + aK_1) \\ K_3 &= hf(t_n + sh, y_n + bK_1 + cK_2) \\ K &= w_1K_1 + w_2K_2 + w_3K_3 \\ y_{n+1} &= y_n + K \end{aligned}$$

Find the system of equations satisfied by $r, s, a, b, c, w_1, w_2, w_3$ that will make the above algorithm a third order method.

Inline links. Links can be provided within the text to jump to a magnified region that needs to be inspected more closely. The links below are different from the ones above. After jumping to a magnified rectangle, restore the preview view by clicking on the rectangle.

Carl Runge

Carl Runge (1867-1944) was the third of four sons from a well-to-do German merchant family. He is remembered for his Runge-Kutta method for solving differential equations.

Martin Kutta

Martin Kutta (1867-1944) extended the Runge's method of solving ordinary differential equations. He is also known for his work on airfoils.

This work was motivated by Mohsen Maesumi.