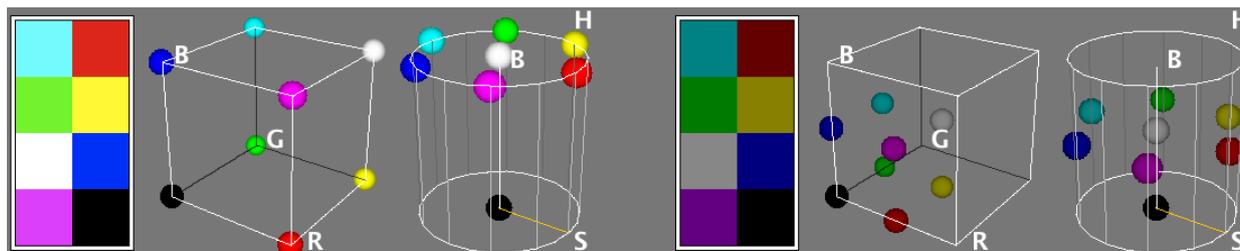


6 – Color image processing

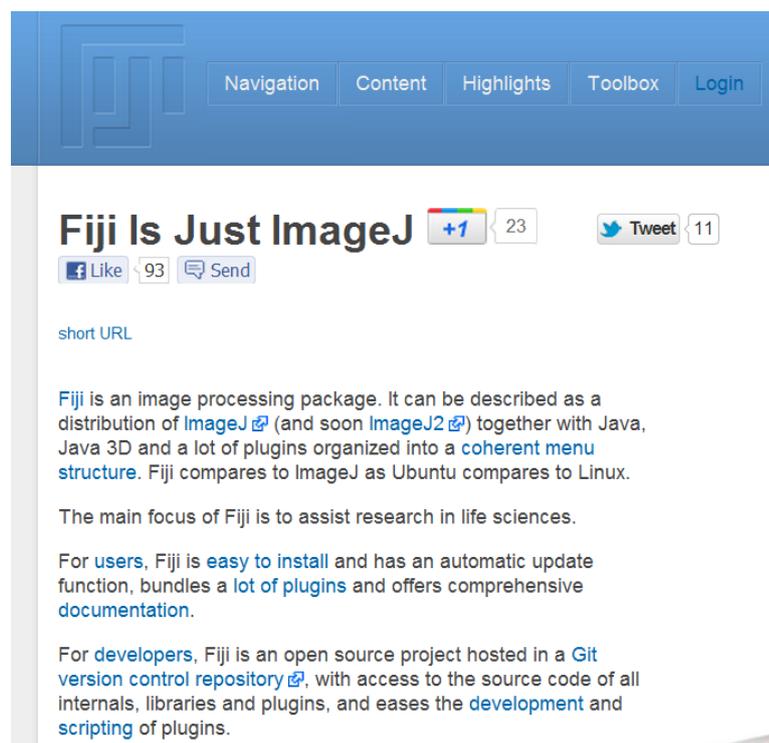


- Open color image **Flowers.tif**. An RGB image can be split into individual R, G and B channels with *Image<Color<Split Channels*; the reverse operation is *Image<Color<Merge Channels*. Apart from this, it can be converted into an RGB stack or an HSB stack using the *Image<Type<RGB Stack* or *Image<Type<HSB Stack* commands, respectively. HSB stands for hue, saturation and brightness.
- Individual channels' histograms can be obtained via *Plugins<Macros<RGB Histogram*. By shifting the Brightness (i.e. intensity) slider in the *Image<Adjust<Color Balance* left or right you can see how changing the amount of R, G or B component affects the image appearance – e.g. by lowering/increasing the amount of red component the image becomes more cyan-like/reddish.
- Segmentation on the HSB, RGB, CIE Lab and YUV color spaces can be performed by the *Image<Adjust<Color Threshold* command.
- An RGB image can also be converted into a pseudocolor (indexed) image. Using **Flowers.tif** image select *Image<Type<8-bit Color*. This operation reduces 16,7 millions of colors (3x8-bit true color image) to 256 colors defined by a particular look-up table (LUT). You can get access to this LUT by selecting *Image<Color<Show LUT*.
- In the above command (*Image<Color<Show LUT*) you can also specify a lower number of colors. Type in "50" and compare the resulting image with the one containing 256 colors. You can see that the representation of natural images such as this one requires a larger number of colors due to the occurrence of numerous smooth color transitions.
- To convert color images from one color space to another, several plugins are available, e.g.:
 - Color Transformer: <http://rsbweb.nih.gov/ij/plugins/color-transforms.html>
 - Color Space Converter: <http://rsbweb.nih.gov/ij/plugins/color-space-converter.html>
 - 3D Color Inspector / Color Histogram: <http://rsbweb.nih.gov/ij/plugins/color-inspector.html>

For more advanced transformations other software tools, such as MATLAB, are more convenient.

Future of ImageJ

Fiji <http://fiji.sc/wiki/index.php/Fiji>



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Fiji is an image processing package. It can be described as a distribution of [ImageJ](#) (and soon [ImageJ2](#)) together with Java, Java 3D and a lot of plugins organized into a [coherent menu structure](#). Fiji compares to ImageJ as Ubuntu compares to Linux.

The main focus of Fiji is to assist research in life sciences.

For [users](#), Fiji is [easy to install](#) and has an automatic update function, bundles a [lot of plugins](#) and offers comprehensive [documentation](#).

For [developers](#), Fiji is an open source project hosted in a [Git version control repository](#), with access to the source code of all internals, libraries and plugins, and eases the [development](#) and [scripting](#) of plugins.

ImageJ2 <http://developer.imagej.net/about>

About ImageJ2

ImageJDev is a **federally funded, multi-institution** project to develop the next-generation version of **ImageJ**, an image processing program widely used for scientific research. We wish to strengthen both the ImageJ software itself and its community by pursuing a unified vision of ImageJ and associated community resources, including this website, code and plugin repositories, and user and developer documentation.

About ImageJDev

- [Aims](#) - A summary of the ImageJDev project aims
- [Collaborators](#) - A list of people and institutions involved in the project
- [FAQ](#) - Frequently asked questions about the project
- [Funding](#) - How the project is funded
- [History](#) - A timeline of ImageJ's development over the past decade
- [Proposal](#) - The full text of the original ImageJDev grant proposal
- [Rationale](#) - Motivation behind the ImageJDev effort

Site sections

- [Blog](#) - Notes and updates from the developers
- [Community](#) - Mailing lists and other resources for the ImageJ community
- [Design](#) - Technical details on the ImageJDev software design
- [Development](#) - Information for programmers on developing ImageJDev
- [Downloads](#) - Binary distributions of ImageJDev (coming soon)
- [Plugins](#) - A list of plugins developed and/or maintained by the ImageJDev project
- [Roadmap](#) - The ImageJDev project's current progress and future directions