

---

Subject: watershed segmentation

Posted by [Alrik van den Brom](#) on Fri, 06 Jun 1997 07:00:00 GMT

[View Forum Message](#) <> [Reply to Message](#)

---

Hi,

does anyone know if there exists an IDL routine for the watershed segmentation algorithm? It's a algorithm, used in digital image processing, for separating overlapping features on a binary picture.

Groet,

Alrik.

\*\*\*\*\*

Alrik van den Brom

woonachtig op: De Residentie

Hondsrug 184  
3524 BV  
Utrecht  
030-2895597

E-mail: [a.j.vandenbrom@fys.ruu.nl](mailto:a.j.vandenbrom@fys.ruu.nl) or [a.j.vandenbrom@chem.ruu.nl](mailto:a.j.vandenbrom@chem.ruu.nl)

\*\*\*\*\*

---

---

Subject: Re: watershed segmentation

Posted by [John Votaw](#) on Wed, 11 Jun 1997 07:00:00 GMT

[View Forum Message](#) <> [Reply to Message](#)

---

Karsten Rodenacker wrote:

>

> Alrik van den Brom wrote:

>>

>> Hi,

>>

>> does anyone know if there exists an IDL routine for the watershed  
>> segmentation algorithm? It's a algorithm, used in digital image  
>> processing, for separating overlapping features on a binary picture.

>>

>> Groet,

>>

>> Alrik.

>>

> Vice versa, I am strongly interested in a 3-D watershed implementation

> as well as a quick 3-D distance transformation!  
>

I have an implementation of the 3D watershed operation that I am willing to share. I should warn you of a few things first. My application is in PET imaging and I typically have `fltarr(128,128,50)` image volumes of rather noisy data. My implementation is NOT a binary implementation. You give it the image volume and a point of interest. To keep with the water shed analogy, the water table is initially set to the value of the point of interest. The water table is then slowly raised (image threshold reduced) until the basin that contains the original point merges with an initially distinct basin. Because I have noisy data, I use a neighborhood operation around the edge of the basin to skip over basins (small puddles) that are only 1 or a few pixels wide.

Also, I could not figure out how to implement the algorithm without using nested loops so the code is probably not optimal.

If you would like to try the programs, send me email directly. I would very much appreciate users that give me comments to improve my programs and/or programming style.

----

John R. Votaw, Ph.D.  
Associate Professor of Radiology  
Emory Center for Positron Emission Tomography  
[votaw@commander.eushc.org](mailto:votaw@commander.eushc.org)  
voice: (404)712-7954 FAX: (404)712-7962

---