

```

1 function [mVorticity, sCor, excluded] = getVortexParam(filename, pathname, num, s)
2
3     if(nargin < 3)
4         num = 2;
5     end
6
7     if(nargin < 4)
8         s = 1;
9     end
10
11     fprintf('getVortexParam : Appel de followVortex \n');
12
13     [vortex, vorticity, cX, cY, excluded] = followVortex(filename, pathname, num, s);
14     sCor = {};
15     mVorticity = {};
16
17     fprintf('getVortexParam : Extraction des vorticités moyennes et des abscisses
18             curvilignes \n')
19     tic;
20
21     for i = 1:s
22         smCy = smooth(cY{1,i}(:), 5);
23
24         xx = linspace(cX{1,i}(1), cX{1,i}(end), 1000);
25
26         try
27             yy = interp1(cX{1,i}(:), smCy, xx);
28         catch
29             fprintf('getVortexParam : La suppression de tout un set de données n\'est
30                     pas conseillée \n');
31             sCor{i} = {};
32             mVorticity{i} = {};
33             break;
34         end
35
36         figure(2);
37         hold on
38         plot(xx,yy);
39         hold off
40
41         XX = diff(xx);
42         YY = diff(yy);
43
44         S = (XX.^2 + YY.^2).^(1/2);
45         s = [0 cumsum(S)];
46
47         cXX = repmat(cX{1,i}(:), 1, length(xx));
48         cYY = repmat(cY{1,i}(:), 1, length(yy));
49
50         xxT = repmat(xx', 1, length(cX{1,i}(:)));
51         yyT = repmat(yy', 1, length(cY{1,i}(:)));
52
53         dXX = abs(xxT'-cXX);
54         dYY = abs(yyT'-cYY);
55
56         [M, I] = min(dXX');
57         sCor{i} = s(I);
58         mVorticity{i} = cellfun(@mean, vorticity(~cellfun(@isempty, vorticity(:,i)),i));

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58     try
59         figure(3);
60         hold on
61         plot(sCor{i}, mVorticity{i}, '.');
62         hold off
63
64     catch
65         fprintf('getVortexParam : Une erreur a été rencontré lors de l\'affichage ,
66             données sauvegardées \n');
67     end
68
69     elapsed = toc;
70     fprintf('getVortexParam : Extraction achevée en %d secondes \n',...
71         elapsed);
72 end

```