

**Processing of SAR (Synthetic Aperture Radar) acquisitions with PSInSAR™ over the San Francisco Bay and Sacramento area**

**Processing Report**

**DESCENDING ERS-1 and ERS-2 dataset**

To the attention of

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**1 Data-Set used TRACK: 70**

| #     | Date       | Satellite | Dc *    | Bn ^    | Bt [days] |
|-------|------------|-----------|---------|---------|-----------|
| 1     | 06/05/1992 | ERS1      | 0.1851  | 0.2097  | -2614     |
| 2     | 10/06/1992 | ERS1      | 0.1815  | 0.3838  | -2578     |
| 3     | 19/08/1992 | ERS1      | 0.169   | 0.0094  | -2508     |
| 4     | 23/09/1992 | ERS1      | 0.153   | -0.0226 | -2473     |
| 5     | 06/01/1993 | ERS1      | 0.1361  | -0.418  | -2369     |
| 6     | 30/06/1993 | ERS1      | 0.1719  | -0.1741 | -2193     |
| 7     | 01/09/1995 | ERS1      | 0.155   | -0.1034 | -1400     |
| 8     | 10/11/1995 | ERS1      | 0.1407  | 0.367   | -1330     |
| 9     | 11/11/1995 | ERS2      | -0.0339 | 0.1634  | -1329     |
| 10    | 29/03/1996 | ERS1      | 0.1626  | -0.2932 | -1190     |
| 11    | 30/03/1996 | ERS2      | -0.0134 | -0.3778 | -1189     |
| 12    | 03/05/1996 | ERS1      | 0.1789  | 0.7081  | -1155     |
| 13    | 04/05/1996 | ERS2      | 0.017   | 0.6392  | -1154     |
| 14    | 17/08/1996 | ERS2      | -0.039  | -0.1295 | -1049     |
| 15    | 26/10/1996 | ERS2      | -0.0215 | 0.7555  | -979      |
| 16    | 30/11/1996 | ERS2      | -0.0002 | 0.7617  | -944      |
| 17    | 04/01/1997 | ERS2      | 0.0087  | 0.0229  | -909      |
| 18    | 02/08/1997 | ERS2      | -0.0166 | 0.0203  | -699      |
| 19    | 06/09/1997 | ERS2      | -0.0072 | 0.396   | -664      |
| 20    | 11/10/1997 | ERS2      | -0.0259 | 0.3871  | -629      |
| 21    | 20/12/1997 | ERS2      | 0.0441  | 0.1406  | -559      |
| 22    | 04/04/1998 | ERS2      | -0.0221 | -0.3031 | -454      |
| 23    | 18/07/1998 | ERS2      | -0.0155 | -0.5136 | -350      |
| 24    | 22/08/1998 | ERS2      | -0.0155 | -0.232  | -314      |
| 25    | 26/09/1998 | ERS2      | -0.0094 | 0.5228  | -279      |
| 26    | 31/10/1998 | ERS2      | -0.0231 | 0.6752  | -244      |
| 27    | 05/12/1998 | ERS2      | -0.0057 | -0.1709 | -210      |
| 28    | 09/01/1999 | ERS2      | 0.0389  | -0.714  | -175      |
| 29    | 13/02/1999 | ERS2      | 0.0382  | 0.6963  | -139      |
| 30    | 20/03/1999 | ERS2      | 0.0509  | 0.1893  | -104      |
| 31    | 24/04/1999 | ERS2      | 0.0279  | -0.053  | -69       |
| 32    | 29/05/1999 | ERS2      | 0.0065  | 0.6132  | -34       |
| 33(M) | 03/07/1999 | ERS2      | 0       | 0       | 0         |
| 34    | 07/08/1999 | ERS2      | -0.0593 | 0.5496  | 34        |
| 35    | 11/09/1999 | ERS2      | -0.0192 | -0.4519 | 69        |
| 36    | 16/10/1999 | ERS2      | -0.0139 | -0.0951 | 104       |
| 37    | 20/11/1999 | ERS2      | -0.0213 | -0.2019 | 139       |
| 38    | 25/12/1999 | ERS2      | 0.0227  | 0.3423  | 174       |

|    |            |      |         |         |     |
|----|------------|------|---------|---------|-----|
| 39 | 29/01/2000 | ERS2 | 0.0253  | 0.0532  | 209 |
| 40 | 08/04/2000 | ERS2 | -0.0509 | 0.0985  | 280 |
| 41 | 17/06/2000 | ERS2 | -0.3933 | -0.0034 | 350 |
| 42 | 22/07/2000 | ERS2 | -0.3763 | -0.2229 | 385 |
| 43 | 26/08/2000 | ERS2 | -0.3215 | 0.5962  | 420 |
| 44 | 30/09/2000 | ERS2 | -0.0304 | -0.2007 | 455 |
| 45 | 04/11/2000 | ERS2 | -0.0644 | 0.1574  | 490 |
| 46 | 09/12/2000 | ERS2 | 0.1246  | -0.2918 | 525 |

^ fraction of critical baseline    \* Fraction of PRF    (M) Master acquisition

### 1.1 Discarded Images

| Date       | Satellite | Bn ^    | Dc *   | Bt [days] | Comment                                       |
|------------|-----------|---------|--------|-----------|---|
| 15/07/1992 | ERS1      | -0.0424 | 0.1861 | -2543     | Not enough data.                              |
| 19/05/1995 | ERS1      | ---     | 0.1709 | ---       | The two images are not overlapped for append. |
| 15/12/1995 | ERS1      | 0.6121  | 0.151  | -1295     | Not enough data.                              |

^ fraction of critical baseline    \* Fraction of PRF

## 2 PS report – San Francisco Bay

|                 |   |
|-----------------|---|
| Site Name       | SAN FRANCISCO SACRAMENTO ERS_D_T70_2835 |
| Customer        | University of Berkeley                  |
| Project Manager | Fabrizio Novali                         |

|                                 |                         |
|---------------------------------|-------------------------|
| End of work                     | 06/03/2008              |
| Software used                   | PSproc                  |
| Version                         | 3.0                     |
| Analysis type                   | Standard PS Analysis    |
| Interpolation factor            | 1                       |
| Platform used                   | ERS2 ERS1               |
| Acquisition Geometry            | DESCENDING              |
| Critical Baseline [m]           | 1286.8605               |
| Pulse Repetition Frequency [Hz] | 1679.902                |
| Number of scenes                | 46                      |
| Temporal range of analysis      | 06/05/1992 - 09/12/2000 |
| UTC Time / Local Time           | 18:50:17                |

|                                       |                                   |
|---------------------------------------|-----------------------------------|
| <b>Georeferencing layer</b>           | Landsat (30x30 m resolution)      |
| <b>Projection system</b>              | NAD_1983_UTM_Zone_10N             |
| <b>Reference Point</b>                | NORTH: 4147500.00 EAST: 596090.00 |
| <b>Area dimension</b>                 | 19072 Km <sup>2</sup>             |
| <b>Number of detected PS</b>          | 217561                            |
| <b>False Alarm Rate</b>               | $10^{-05}$                        |
| <b>PS density (PS/km<sup>2</sup>)</b> | 11.41                             |

## 2.1 Information about Velocity field and Line of Sight

|   |  |            |             |
|---|--|------------|-------------|
| <b>Line Of Sight – LOS versor coordinates</b> | H: 0.91808   | E: 0.38858 | N: -0.07826 |
| <b>Trend/tilt removed during processing?</b>  | none   |            |             |
| <b>Delivered Files</b>                        | SAN_FRANCISCO_SACRAMENTO_ERS_D_T70_2<br>835_TRE_765_002_100-REF.dbf<br>SAN_FRANCISCO_SACRAMENTO_ERS_D_T70_2<br>835_TRE_765_002_100-TSR.dbf |            |             |

## 2.2 Velocity Field

