| New AASPI Algorithms: February 2015 | | | | |
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| **Application Name** | **Application Description** | **Location** | **Software Documentation** | **AASPI References** |
| vector_flatten, vector_stratal_slice and GUIs aaspi_vector_flatten and aaspi_vector_stratal_slice | These programs are similar to flatten and stratal slice but work with vector input. Typical "vectors" may be spectral magnitude/phase components, most-positive curvature/most-positive curvature strike, dip magnitude/dip azimuth, reflector convergence/azimuth of reflector convergence, and so on. The vectors are internally rendered as complex values, interpolated and then output as vector magnitude and azimuth (phase) components | Under aaspi_util > Formation Attributes tab | Simple utility. No documentation at present. | http://mcee.ou.edu/aaspi/publications/2015/Wallet%20and%20Davogustto%20-%20using%20phase%20in%20spectral%20decomposition.pdf |
| display_aaspi_headers and GUI aaspi_display_aaspi_headers | A simple utility to display the values of headers after conversion to AASPI format from SEGY format. Users select desired header | Under aaspi_util > Other Utilites and aaspi_util_prestack > Other Utilities tabs | Simple utility. No documentation at present. | Simple utility |
| convert_stratal_slice_to_ascii_surface and its GUI aaspi_convert_aaspi_stratal_slice_to_ascii_surface | Many attributes, such as SOM and GTM may be most appropriately run along horizons or stratal slices. Applications such as stratal_slice will generate input data along irregular (interpolated) surfaces, where each trace exhibits a different start time and sample increment. This program outputs a suite of ascii-format files that can be reimported into Kingdom Suite, GoCad, VoxelGeo, and other packages that allow importation of (inline, crossline, time, attribute) quartets. At present, it does not appear that Petrel allows such importation | Under aaspi_util > Other Utilites | Simple utility. No documentation at present. | Simple utility |

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| psvm3d | Proximal Support Vector Machines is a modern supervised learning algorithm written by Ph.D. candidate Tao Zhao that clusters data given external training, such as well log correlations to multiple seismic attribute data about the wells. | Under aaspi_util > Formation Attributes | http://mcee.ou.edu/aaspi/documentation/Volumetric_Classification-psvm3d.pdf | http://mcee.ou.edu/aaspi/submitted/2015/Tao_Interpretation_1.pdf |
| psvm_welllogs | This program is used in training and validation of seismic facies produced by program psvm3d. This program reads in ASCII format data (typically from well logs but perhaps also hand picked facies values ir microseismic event locations and magnitude). These data are then linked to predict corresponding attribute vectors. | Under aaspi_util > Formation Attributes tab | file:///ouhomes/aaspi/AASPI_GIT/documentation/Well_Analysis-psvm3d.pdf | http://mcee.ou.edu/aaspi/publications/2014/Tao_SEG.pdf |