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| **Vmstools Reference Card** |
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| **Data** |
| **data(eflalo2)** load eflalo2 test dataset |
| **data(tacsat)** load the tacsat test dataset |
| **data(harbours)** load the harbour test dataset |
| **data(VMShf)**load the VMS high ping rate test dataset |
| **data(VMS)** load the VMS test dataset |
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| **Metièr definitions** |
| **Classif()** |
| **Fonctions()** |
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| **Tacsat Behavior Analyses** |
| **filterTacsat(tacsat)**filter out records that do not lay within a speed  range and/or change of heading interval |
| **pointInHarbour(tacsat)**flags tacsat points that are positioned in a  harbour |
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| **Link eflalo2 - tacsat** |
| **merge.vms.to.logbook.at.the.ping.scale (eflalo2,tacsatplus,general,vesselid)**Merge eflalo2 and  tacsat+ on tacsat ping level |
| **mergeEflalo2Tacsat(eflalo2,tacsat)**Merge eflalo2 and tacsat at  trip level |
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| **Interpolate tacsat** |
| **interpolateTacsat(tacsat,interval,margin,res,method,params,headingAdjustment)** interpolate tacsat data between pings *x*  minutes apart using straight line or cubic Hermite spline interpolation |
| **calculateCI(longitudes,latitudes,interpolations,indexInterpolation,tacsat,grid,spatialDataFrame,singleInterpolation,indexTacsat,parameters)** calculate a confidence  interval around the interpolation |
| **diffInter(interpolation,tacsatHighRes)** calculate difference  between true high-resolution data and interpolated dataset |
| **distanceInterpolation(interpolation)**calculate length of  interpolation |
| **distanceTacsat(tacsat,index)** calculate distance between gps  coordinates of a complete VMS dataset |
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| **Plotting** |
| **createGrid(xrange,yrange,resx,resy)**create spatial grid |
| **mapGrid()** |
| **vmsGridCreate()** |
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| **Converting** |
| **bearing(lon1,lat1,lon2,lat2)** calculate bearing from tacsat  longitude and latitude data |
| **degree2Km(lon,lat,degree)** convert degrees to kilometers, only in  longitudinal direction |
| **distance(lon1,lat1,lon2,lat2)** calculate distance between two  gps coordinates |
| **km2Degree(lon,lat,km)** convert kilometers to degrees, only in  longitudinal direction |
| **lonLatRatio(lon,lat)**compute the ratio between distance in longitude  and latitude |
| **ICESrectangle(tacsat)** calculate ICES rectangle from gps location |