# CALIBRATION OF BACKSCATTER FROM SCATSAT

**Rationale**: Accuracy of ocean surface wind vectors measured by space-borne scatterometers depends on measured backscattering coefficient ($\sigma^0$). Hence an in-flight calibration of a satellite scatterometer is essential, as this is not guaranteed by its pre-launch absolute calibration tests. Post launch calibration of $\sigma^0$ is also required for monitoring the time evolution of the accuracy of measured $\sigma^0$. This is performed using relative calibration over land targets with trivial spatio-temporal variation of $\sigma^0$. Over such targets one can access the consistency of near-simultaneous measurements from the differences in fore and aft looks and biases between the ascending and descending passes. A few such targets are Amazon (AMA), Greenland (GRN), Antarctica (ANT) and Runn of Kutch (ROK). These are historically used for calibrating scatterometers including first Indian scatterometer OSCAT on board Oceansat-2. Similar type of calibration has been performed routinely in case of the SCATSAT-1 on a monthly basis. Further cross track biases (CTB) are also computed over ocean which modulates the quality of wind from scatterometer.

**Structure of the directory:** The calibration products are kept monthly in directory named on basis of month (MMM e.g. JAN). This month folder is within the directory named on basis of year (YYYY e.g. 2017).

Within each monthly (MMM) directory one can find 10 gif files representing the following information

1. Differences of backscatter between fore and aft looks (FOR-AFT) referred as look bias of scatterometer (4 NOS)
2. Differences of backscatter between ascending and descending(ASC-DES) passes referred as pass bias of scatterometer (4NOS)
3. The gif file containing tables of look bias (1 NOS) and pass bias (1 NOS)
4. Cross track biases over ocean from ascending and descending passes (2 NOS).

Thus 8 gif files represents the look biases and pass biases over specific calibration sites along with 2 files representing total bias in tabular form and 2 files are for cross track biases over ocean.

**File Name Conventions:**

**File Name (Site Specific):** SCATTEROMETER NAME_LEVEL OF DATA_CALIBRATION SITE _MONTH&YEAR_ VARIABLE.gif

E.g. SCAT_L2A_AMA_JAN2017_ASC-DES.gif

And for tabular representations SCAT_L2A_TAB_FEB2017_ASC-DES.gif

**File Name (cross track biases):** SCATTEROMETER NAME_LEVEL OF DATA_CROSS TRACK BIAS _MONTH&YEAR_PASS.gif

E.g. SCAT_L2A_CTB_JAN2017_ASC.gif

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