

M-1 Base Hurricane Storm Set

- Hurricane frequencies for model validation and calibration based on February 2016 HURDAT2 (1900-2015)
- No trends, weighting, or partitioning are conducted
- Calibration and validation uses the complete base hurricane storm set
- PDFs updated to include new seasons (2014-2015) and HURDAT reanalysis of storms (1951-1955).
- Discussed with Pro Team: updates of HURDAT2; due to Reanalysis, a new storm added (Hazel, 1953) and there was a revision of Florence (1953). Forms M-1 / S-1 reviewed by pro team
- FPHLM v6.2 is in compliance with Standard M-1

M-2 Hurricane Parameters and Characteristics

- Methods based on information documented in currently accepted scientific literature
- Parameters graphically described and justified
- Discussed with Pro team: graphical comparison of changes in asymmetry for various fixed R_{max} , B and CP . No changes in parameter distributions.
- FPHLM v6.2 is in compliance with Standard M-2

M-3 Hurricane Probabilities

- Modeled probability distributions consistent with historical Atlantic basin hurricanes
- Landfall probabilities consistent with historical base set for coastal segments of Florida and neighboring states
- Intensity based on modeled max 1-min wind speed at 10 m and is consistent with Saffir-Simpson scale wind speed ranges
- Discussed with Pro Team: No changes in parameter distributions or changes in the process for developing landfall frequency distributions
- FPHLM v6.2 is in compliance with Standard M-3

M-4 Hurricane Wind Field Structure

- Wind fields consistent with observed historical storms, e.g. Charley, Katrina, Wilma
- Development of roughness from land use land cover is consistent with the state of the science and is consistent with 2011 NLCD or later as required.
- Vertical variation of wind speed is used to model losses of multistory buildings
- Discussed with Pro Team: Previous version of FPHLM already incorporated NLCD 2011, so no change required. Discussed changes in roughness to due to changes in ZIP code boundaries / centroids.
- FPHLM v6.2 is in compliance with Standard M-4

M-5 Landfall and Over-land Weakening Methodologies

- Method for hurricane wind speed decay over land is based on scientific literature and consistent with historical record
- Wind speed transition from ocean to land is consistent with current state of science
- Discussed with Pro Team: no changes in over-land weakening methodology
- FPHLM v6.2 is in compliance with Standard M-5

M-6 Logical Relationships of Hurricane Characteristics

- Wind field asymmetry increases with storm translation speed, all other factors held constant
- Mean wind speed decreases with roughness, all other factors held constant
- Discussed with Pro Team: demonstrated that the FPHLM has the above logical relationships to risk; Wind Radii quartiles, especially for weaker storms, reported in Form M-3
- FPHLM v6.2 is in compliance with Standard M-6