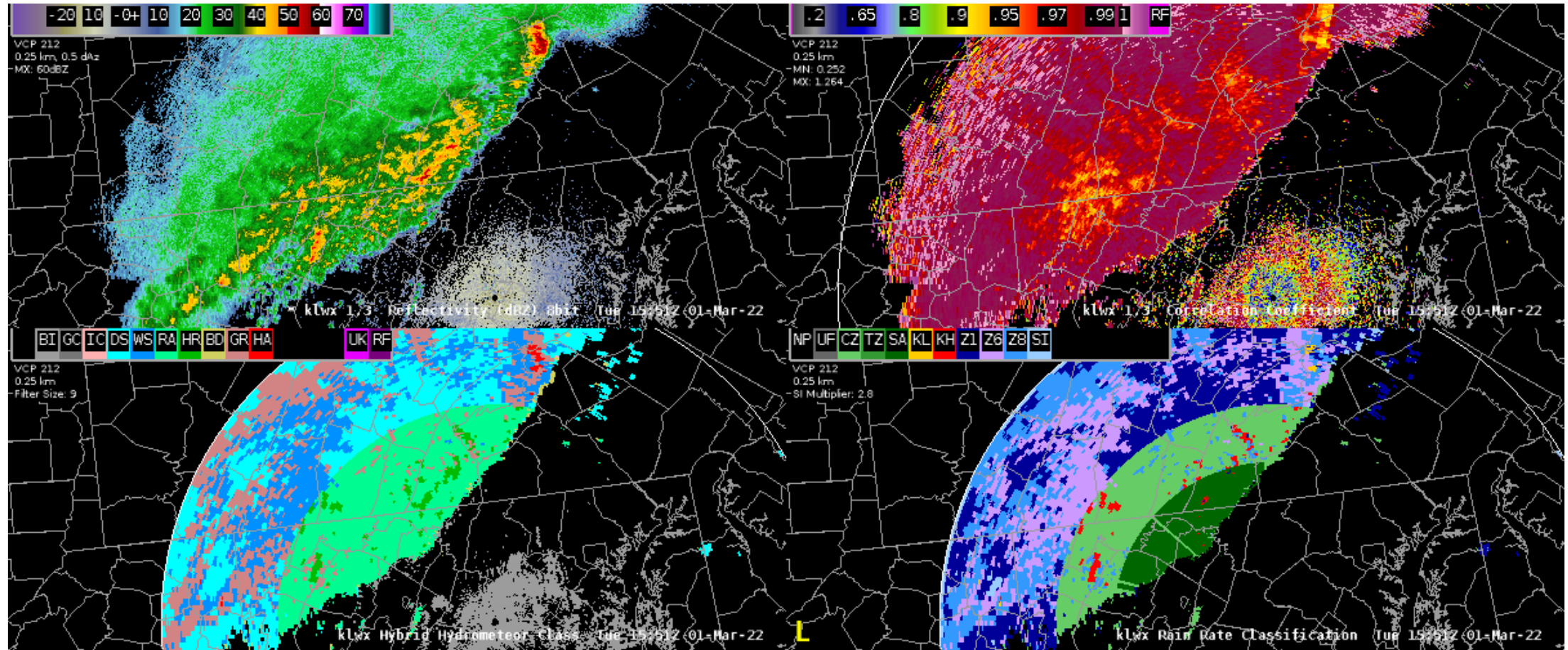


AWIPS 4-panel of Reflectivity, Correlation Coefficient, Hybrid Hydrometeor Classification, and Rain Rate Classification



Labels and Colors for Rain Rate Classification

Display	Color	Meaning
NP	black	No Precip (<i>includes Biota and No Echo</i>)
UF	gray	Unfilled bin (<i>Missing/Unknown</i>)
CZ	light green	Convective R(Z,ZDR)
TZ	medium green	Tropical R(Z,ZDR)
SA	dark green	Specific attenuation rainfall rate, R(A)
KL	yellow	R(KDP) with 25 coefficient for rain/hail mixture
KH	red	R(KDP) with 44 coefficient for heavy rain
Z1	dark blue	R(Z) (<i>the default rate relationship</i>)
Z6	lavender	$R(Z) * 0.6$
Z8	medium blue	$R(Z) * 0.8$
SI	light blue	$R(Z) * \text{multiplier}$ (ice crystals & dry snow above the ML), which is site-adaptable between 1.0 and 2.8

Why is there a need for a Rain Rate Classification (RRC) product?

- ❖ Dual Polarization Quantitative Precipitation Estimation (DP QPE) is a synthetic algorithm that determines a rainfall rate relationship based on a radar sample bin's hydrometeor classification, its location with respect to the melting layer, and availability of polarimetric variables. Briefly, this is an echo classification-based rain rate, $R(EC)$.
- ❖ The Hybrid Hydrometeor Classification (HHC) array product indicates the lowest hydrometeor classification that is not in an exclusion zone, is not biological, and is not ground clutter. In other words, it is the echo classification that could be used to determine rainfall rate.
- ❖ The HHC does *not* distinguish
 - whether continental or stratiform/tropical $R(Z, Z_{dr})$ is being used;
 - where the rate from a rain/hail mixture (low $R(K_{dp})$ rate) or the heavy rain (high $R(K_{dp})$ rate) is being used;
 - how the rate from a particular hydrometeor such as dry snow may differ within or above the melting layer; and
 - where the specific attenuation rainfall rate is being used below the melting layer.
- ❖ The RRC shows what rate relationship is being used where.