

SPICE 3F5 HICUM Model STATUS

- * Tj Clamping (for convergency issue)**
- * Validation vs Hicum Reference Stand Alone (...5Digits)**
- * Hicum Model with External Power Node (5 ext nodes)
(not compatible with standard SPICE 3 F5)**
- * Beta version of Hicum model for Harmonic Balance
(not compatible with standard SPICE 3 F5)**
- * some demand for Free source for no commercial usage ...**
- * some demand for commercial usage :
nothing positive today**
- * Data & Info sent to CADENCE / MENTOR :
=> no answer , no comments**

HARMONIC BALANCE STATUS for SPICE 3F5 (for R.F)

*** New MODELS included in SPICE3F5**

*** Resistive PORT**

*** N_PORT**

*** New ANALYSIS included in SPICE3F5**

*** S-Parameter : give the S Parameters of a Circuit**

*** HB : Harmonic Balance Periodic Steady State
(1 forced Frequency)**

*** QP : H.B QUASI Periodic Steady State
(2 unrelated forced Frequency)**

*** Status of implemented Models for Harmonic Balance :**

*** R , L , C + VSRC + ISRC + Port => OK**

*** BJT : Gummel Poon => OK**

*** BJT : HICUM 2.1 – 4 ext Node => Beta**

HARMONIC BALANCE REQUIREMENTS :

- * AS for the DC OP Analysis :**

- * Equations Valid for a wide range of Terminal Voltages**
- * Current and Current derivatives continuity ...**
- * CHARGES and Charges derivatives continuity ..**

- * Specific to H.B :**

- * Implicit DC OP should converge**
- * H.B is close of Small Signal AC**
(so expecting a good efficiency to get convergency
when using Source Ramping , Source Stepping, ...)
- * Gmin Stepping would be efficient too, to get convergency**
- * Loads the N Matrix using I , G , Q, Cap (using Freq...Dom)**
- * H.B uses a lot of Memory , at a time , so if possible ???**
 - * limit the number of internal nodes ... possible ???**
 - * limit the number of internal devices ... possible ???**