

Bumper Code Update: Russian Segment

Jim Hyde..... [ESCG-KX]
Michael Bjorkman..... [ESCG-KX]
Kevin Hoffman..... [ESCG-KX]
Eric Christiansen... [NASA/JSC-KX]
Dana Lear..... [NASA/JSC-KX]

Release	Date	Description
0	July 20, 2012	Review & comment
1	July 23, 2012	Export Control review



Introduction

- BUMPER-II has been completely revised with the following design goals
 - Maintain multiple versions from a common code base
 - Compile with the Intel Windows “ifort” and with the FSF “gfortran”
 - Separate the Prompt/Response user interface from the calculations
 - Separate the environments from SHIELD
 - Separate the BLEs from RESPONSE
 - Improve data security
 - Refactor into Fortran 90 MODULES
 - Eliminate NCOMMON.BLK
 - Option for 64 bit native application
 - Restructure the .GEM file so that each threat is a record, and load one threat at a time into memory to decrease the memory footprint
 - Use ALLOCATABLE arrays to increase the size of universal files that may be processed
 - Make VBETA calculations an option for each environment
- Updated Bumper code is undergoing beta testing at JSC



Sample Distribution

- Zip file archive
 - F90 source
 - Material property
 - Environment
 - Documentation
 - “Nmake” utility



Name	Type	Modified	Size	Ratio
BUMPER-ISS.exe	Application	7/20/2012 2:0...	1,646 KB	%
BUMPER-ISS-distribution-07-20-2012.zip	WinZip File	7/20/2012 2:0...	23,401 KB	%
D102.ASC	Flash AS Com...	5/28/2008 5:31 PM	18,144	69%
D104.ASC	Flash AS Com...	5/28/2008 5:31 PM	18,144	70%
D105.ASC	Flash AS Com...	5/28/2008 5:31 PM	18,144	70%
D106.ASC	Flash AS Com...	5/28/2008 5:31 PM	18,144	70%
V101.ASC	Flash AS Com...	5/28/2008 5:31 PM	3,265,920	87%
V102.ASC	Flash AS Com...	5/28/2008 5:31 PM	3,265,920	89%
V104.ASC	Flash AS Com...	5/28/2008 5:31 PM	3,265,920	89%
V105.ASC	Flash AS Com...	5/28/2008 5:31 PM	3,265,920	91%
V106.ASC	Flash AS Com...	5/28/2008 5:31 PM	3,265,920	90%
bleCORE.F90	Fortran Source	6/7/2012 2:19 PM	28,659	78%
bleDataTypes.f90	Fortran Source	6/7/2012 2:19 PM	9,527	84%
bleForISS.f90	Fortran Source	7/20/2012 1:55 PM	222,165	82%
bleMLImodsForNNO.f90	Fortran Source	3/1/2012 9:57 AM	2,374	66%
bleNNOwithMLI.f90	Fortran Source	6/7/2012 2:19 PM	3,398	58%
bleReimerdesNNOwithMLI.f90	Fortran Source	6/7/2012 2:19 PM	15,592	69%
bumper.f90	Fortran Source	6/1/2012 2:18 PM	12,740	64%
envDataTypes.f90	Fortran Source	6/7/2012 2:19 PM	6,692	81%
envMEM.f90	Fortran Source	6/7/2012 2:19 PM	8,263	68%
envORDEM2000.f90	Fortran Source	6/7/2012 2:19 PM	61,248	76%
envORDEM3p0.f90	Fortran Source	7/9/2012 2:13 PM	45,305	74%
envORDEM96.f90	Fortran Source	6/7/2012 2:19 PM	46,090	79%
envSSP30425MM.f90	Fortran Source	6/7/2012 2:19 PM	23,742	71%
envSSP30425OD.f90	Fortran Source	6/7/2012 2:19 PM	24,423	69%
geometry.f90	Fortran Source	7/13/2012 9:10 AM	87,808	78%
modBUMPERuiFUNCS.f90	Fortran Source	6/7/2012 2:19 PM	11,261	78%
modBUMPERuiISS.f90	Fortran Source	7/17/2012 4:45 PM	3,077	60%
modENVIRONMENTSforISS.f90	Fortran Source	6/7/2012 2:20 PM	7,736	79%
modGEOMETRYElementArrays.f90	Fortran Source	6/7/2012 2:19 PM	4,586	80%
modGEOMETRYuiISS.f90	Fortran Source	6/8/2012 9:59 AM	14,069	72%
modINPUTS.f90	Fortran Source	6/7/2012 2:19 PM	6,117	63%
modINPUTSforRESPONSE.f90	Fortran Source	7/17/2012 2:34 PM	5,401	73%
modPARAMETERS.f90	Fortran Source	7/20/2012 1:55 PM	3,578	65%
modRESPONSEuiFUNCS.f90	Fortran Source	7/17/2012 4:14 PM	60,398	84%
modRESPONSEuiISS.f90	Fortran Source	7/17/2012 4:39 PM	47,876	82%
modRPLOTuiISS.f90	Fortran Source	6/7/2012 2:20 PM	2,067	58%
modRTABLEarray.f90	Fortran Source	7/17/2012 2:26 PM	14,049	72%
modRunTimeControlFile.f90	Fortran Source	6/7/2012 2:19 PM	5,428	67%
modSHIELDElementArrays.f90	Fortran Source	7/5/2012 2:24 PM	10,035	77%
modSHIELDuiISS.f90	Fortran Source	7/17/2012 2:54 PM	41,615	79%
modSHVBETA.f90	Fortran Source	6/7/2012 2:19 PM	13,788	78%
modTHREATarray.f90	Fortran Source	7/18/2012 1:44 PM	24,082	73%
modUTILITIES.f90	Fortran Source	6/7/2012 2:19 PM	3,034	59%
modVersionNumber.f90	Fortran Source	7/18/2012 2:24 PM	1,078	56%
response.f90	Fortran Source	7/17/2012 2:37 PM	9,589	64%
rplot.f90	Fortran Source	7/18/2012 5:45 PM	5,813	69%
shield.f90	Fortran Source	7/5/2012 2:24 PM	30,205	77%
all_61.html	HTML Docum...	7/20/2012 1:57 PM	13,057	81%
all_62.html	HTML Docum...	7/20/2012 1:57 PM	15,487	82%

