ディスカッション 「*Verification*と*Validation*。 そして*Contribution*」
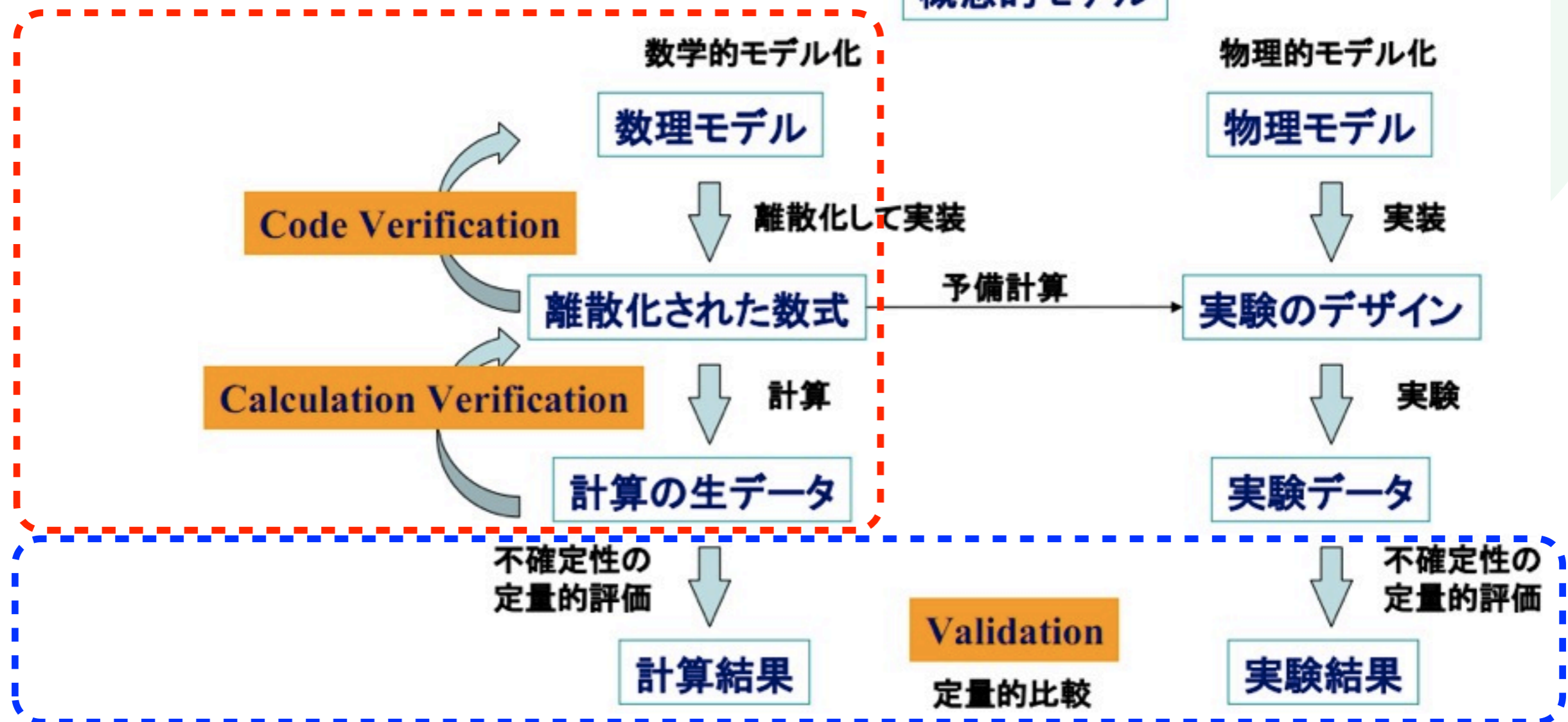
今野　雅 (東京大学、オープンCAE学会)

米国機械学会における**V&V**の概念

Verification
オープンソース vs クローズドソース

Validation
オープンもクローズドも土俵は同じ

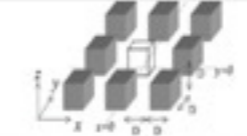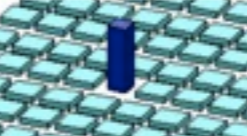図引用: 高野ほか, ASME V&Vの概要, 第15回計算工学講演会, 2010.5
http://jsces.org/research/hqc/gallery_file/08_V&V_takano.pdf

日本建築学会風環境ベンチマーク(AIJ-PWEAB)

日本建築学会のＷＧ(持田、富永ら)

|	test case		dataset	Ref.
A	2:1:1 shape building model		Data file : CaseA(1_1_2).xls	[1]
B	4:4:1 shape building model		Data file : CaseB(4_4_1).xls	[2][3]
C	Simple Building blocks		Data file : CaseC(City_blocks).xls	-
D	A high-rise building in city blocks		Data file : CaseD(Highrise+Blocks).xls CAD File(DXF) : CaseD_dxf.zip CAD File(MCD) : CaseD_mcd.zip	[5]
E	Building complexes with simple building shape in actual urban area (Niigata)		Data file : CaseE(Niigata).xls CAD File(DXF) : CaseE_dxf.zip CAD File(MCD) : CaseE_mcd.zip	[6]
F	Building complexes with complicated building shape in actual urban area (Shinjuku)		Data file : CaseF(Shinjuku).xls CAD File(DXF) : CaseF_dxf.zip CAD File(MCD) : CaseF_mcd.zip CAD File(STL) : CaseF_stl.zip	[6]
G	Two-dimensional pine tree		Data file : CaseG(Tree).xls	[7]

AIJ-PWEABのケース
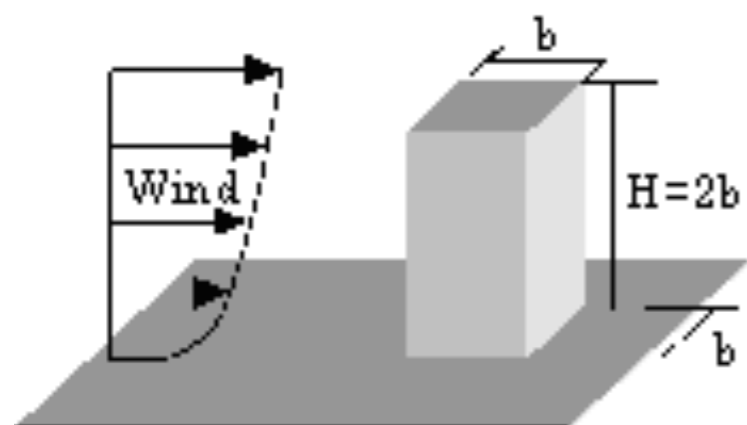
Case A
(2:1:1 shape)
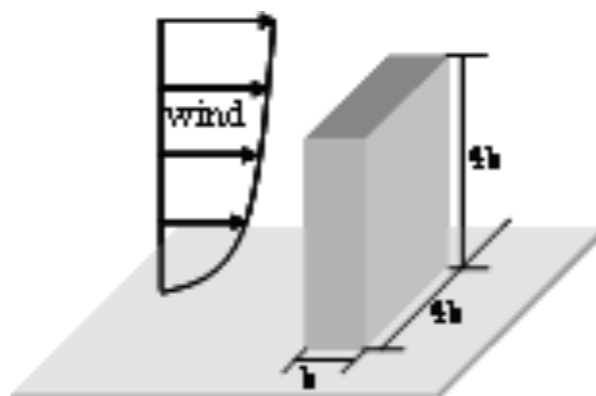
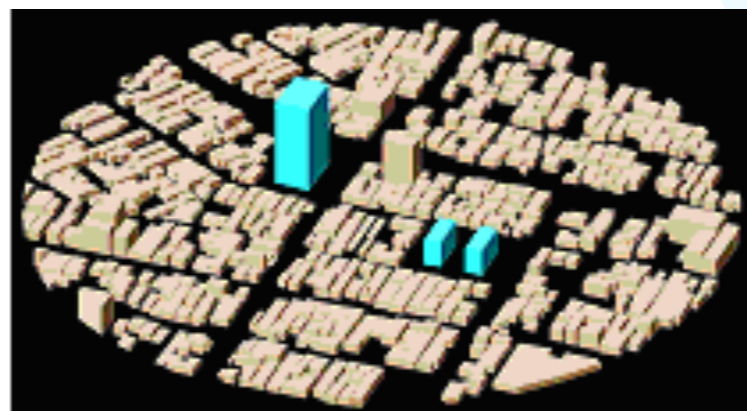Case B
(4:4:1 shape)
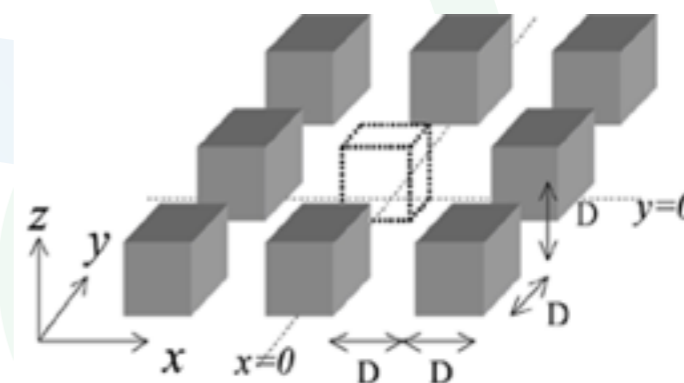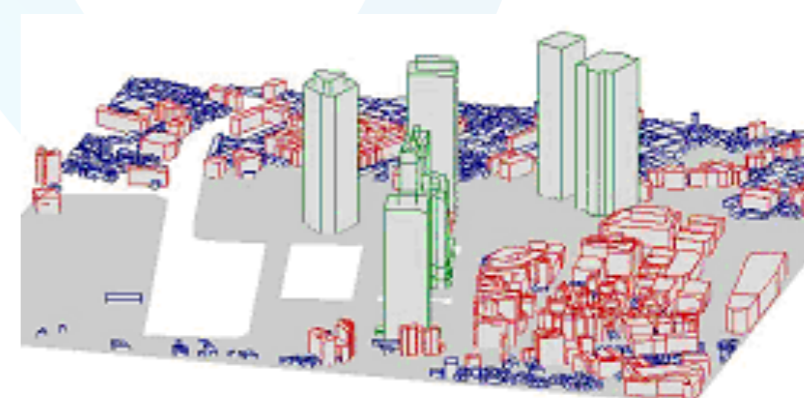

Case C
(Simple blocks)
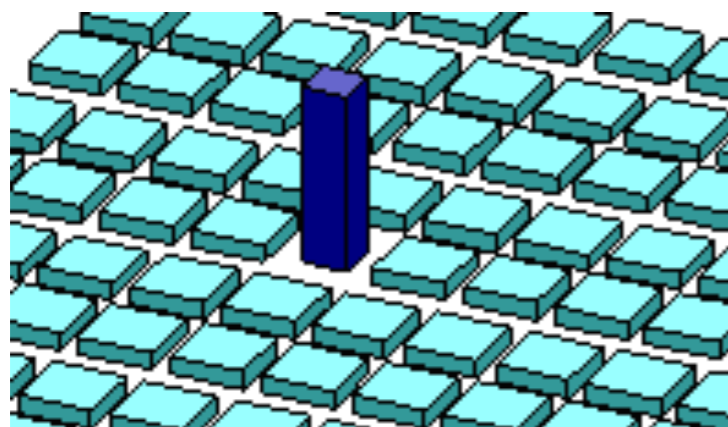
Case D
(High-rise bldg.)

Case E
(Niigata)

Case F
(Shinjuku, Tokyo)
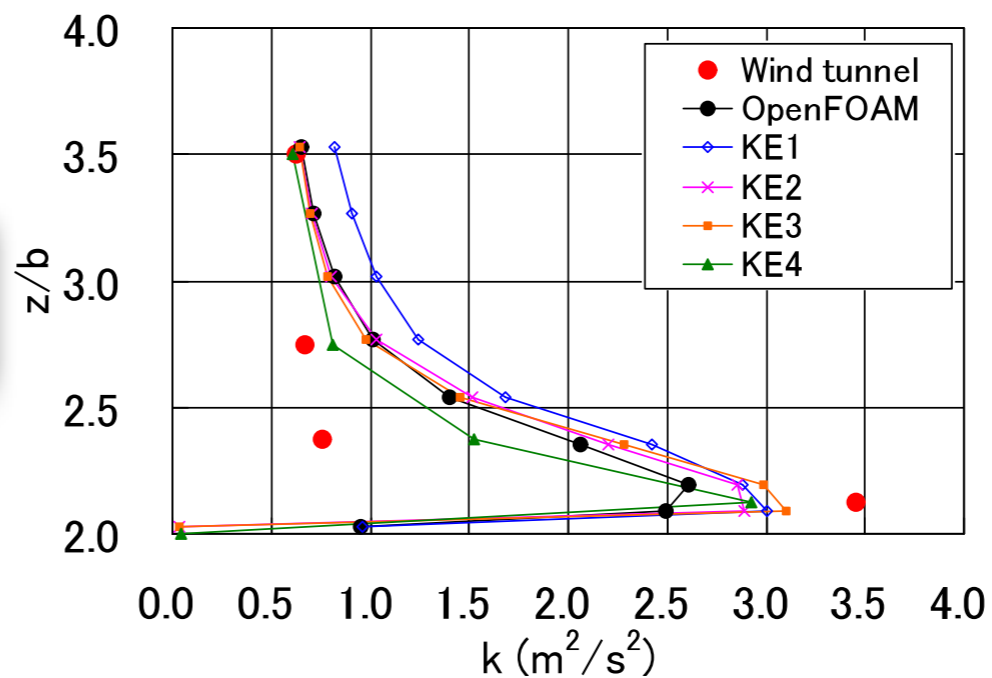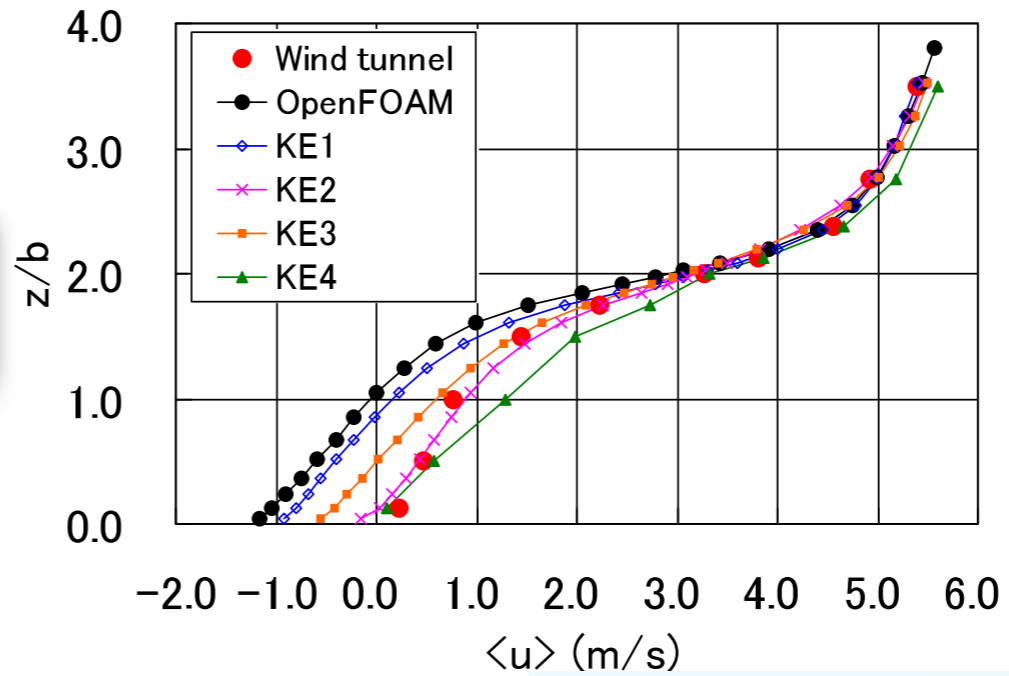
Case Aの計算条件

Mesh	Same as specified in the guidebook
Inflow	Interpolate from wind tunnel results
Top & Side wall	Zero gradient
Ground and bldg. wall	Generalized log law for a smooth wall
Turbulence model	Standard k-epsilon
Advection scheme	TVD(Limited linear)
Algorithm	SIMPLE (simpleFoam)

2:1:1 shape building

21b(x) 13.75b(y) 11.25b(z)

wind block

b b 2b block b=0.08 [m]
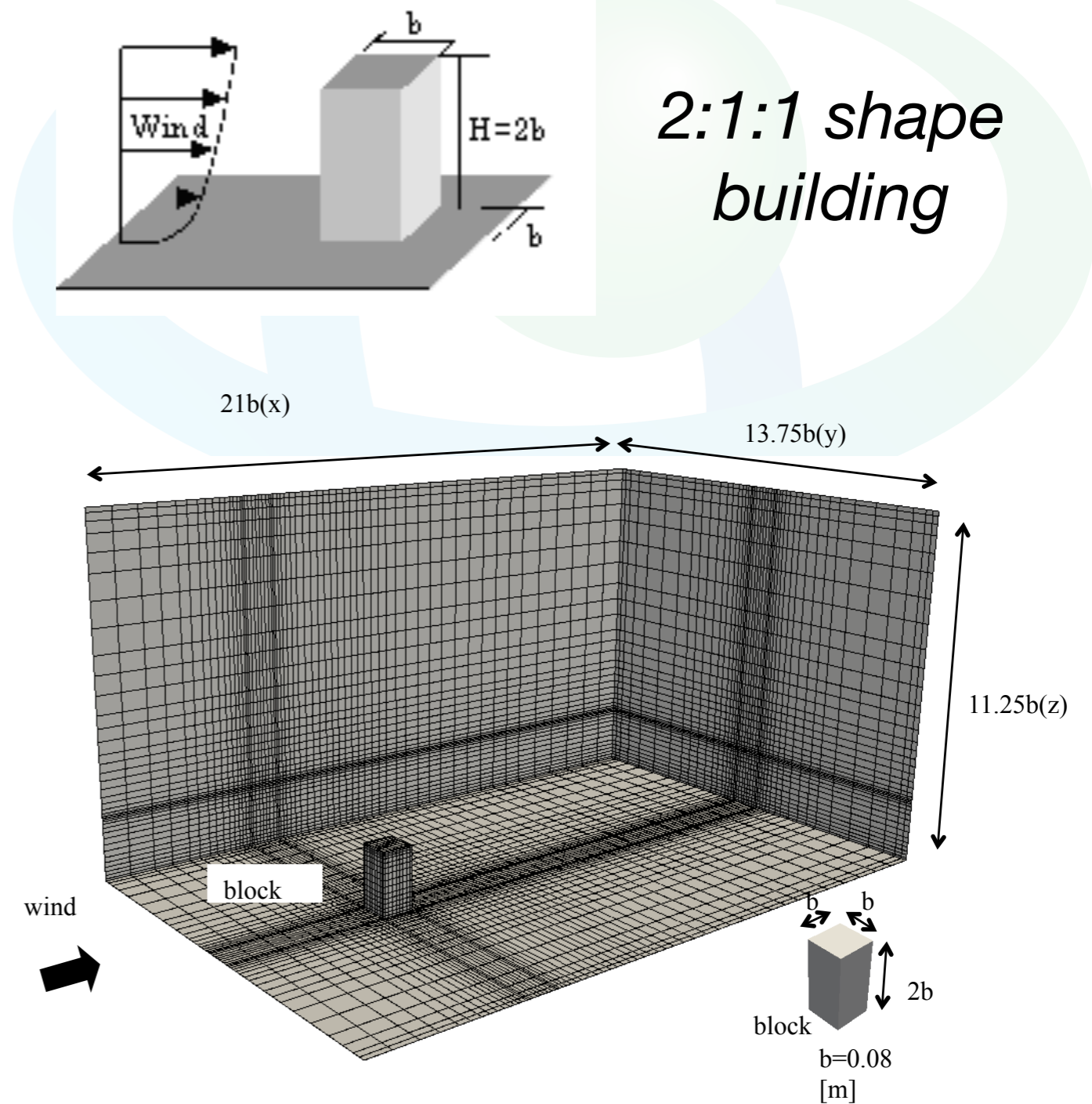
Case AのValidation結果
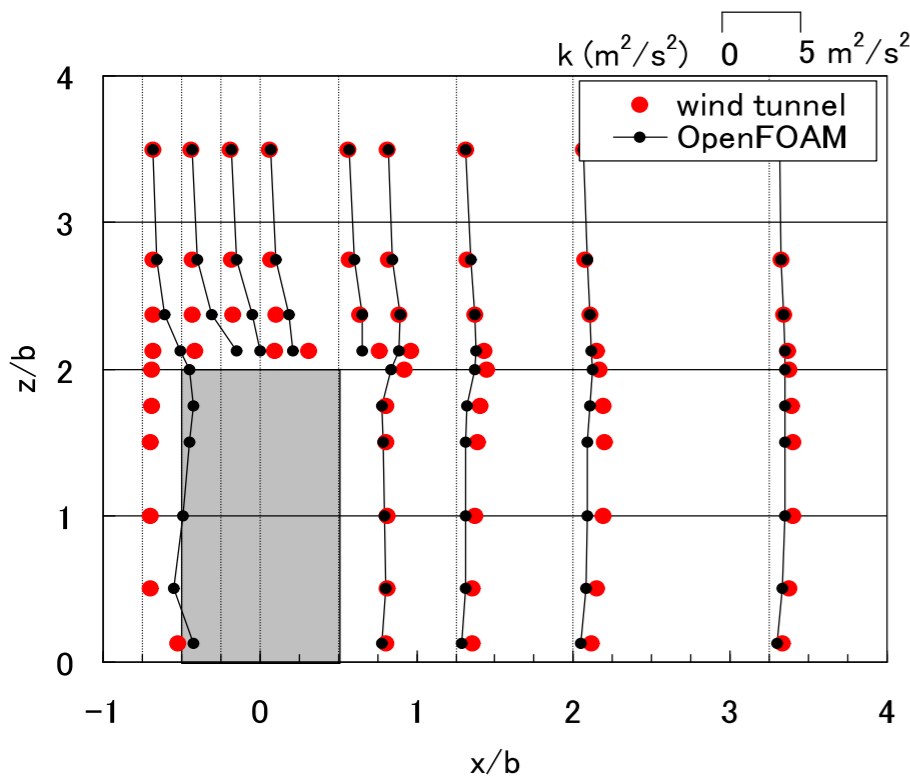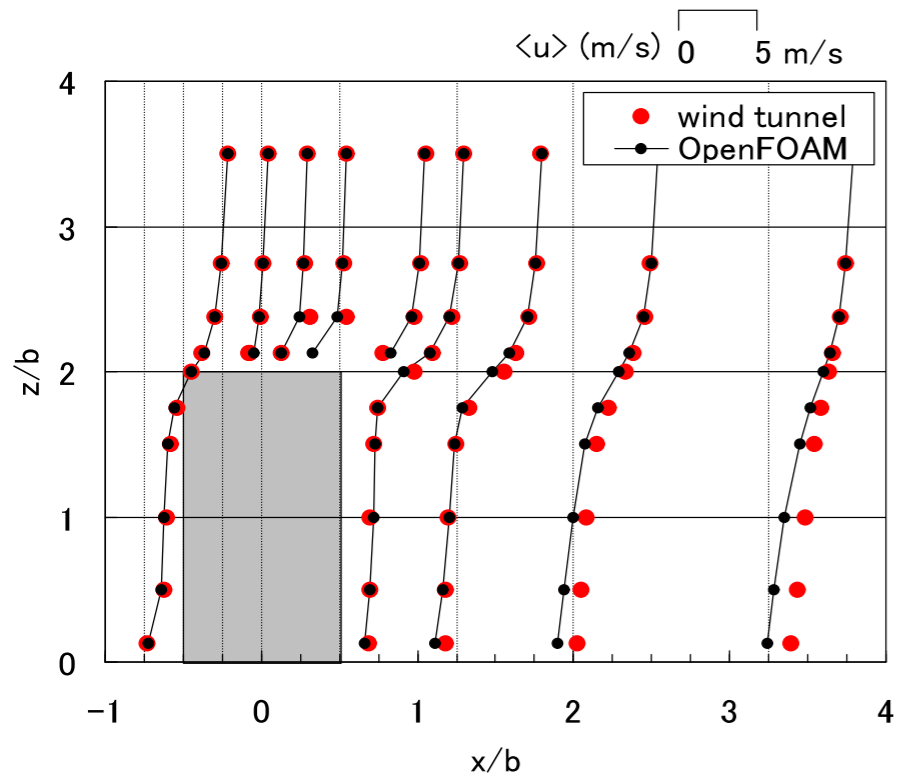
OpenFOAM V&V SIG とレポジトリ

SVNレポジトリ: http://www.opencae.jp/svn/OpenFOAM-VandV-SIG

- AIJ-PWEAB
- ERCOFTAC-SIG15
- ソルバー
- ユーティリティー

皆さんもSIGに参加くださり、各自のValidationケースをコミットして、CAEコミュニティにContribute してください!