Request for additional embedding production for Run 12 *pp* at 200 GeV

Modified by Youqi Song based on Dmitry Kalinkin's request

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1 Global Simulation Settings

- Type of simulations request: Standard Embedding
- Number of events: Given in Figure 1
- Magnetic Field: Reversed Full Field
- Collision Type: pp 200GeV
- Collision centrality: **NONE**
- BFC tags: DbV20130212 pp2012b AgML mtdDat btof fmsDat VFPPVnoCTB useBTOF4Vtx beamline BEmcChkStat Corr4 OSpaceZ2 OGridLeak3D -hitfilt Data Production: P12id
- Geometry for Simu: y2012a
- Geometry for Reco: y2012a
- STAR Library: SL12d
- Vertex option: Leave vertex to be reconstructed vertex, and use VFPPVnoCTB with beamline
- Pile-up option: **NO**
- Detectors set for simulation reco: TPC, BEMC, EEMC

2 Real Data

The following runs are to be used for the Zero Bias sample:

13047003 13047004 13047022 13047023 13047024 13047026 13047027 13047028 13047029 13047030
13047031 13047032 13047033 13047034 13047035 13047036 13047037 13047039 13047041 13047042
13047043 13047044 13047122 13047123 13047124 13047126 13048009 13048010 13048011 13048012
13048013 13048014 13048015 13048016 13048017 13048018 13048019 13048030 13048031 13048032
13048040 13048041 13048042 13048043 13048044 13048045 13048046 13048049 13048050 13048051
13048052 13048053 13048087 13048088 13048089 13048090 13048091 13048092 13048093 13049004
13049005 13049006 13049007 13049031 13049032 13049035 13049039 13049041 13049042 13049044
13049045 13049046 13049047 13049048 13049049 13049050 13049072 13049073 13049080 13049081
13049082 13049086 13049087 13049088 13049089 13049093 13049094 13049096 13049098 13049099
13049101 13050001 13050006 13050007 13050009 13050011 13050012 13050015 13050016 13050020
13050022 13050023 13050025 13050026 13050027 13050028 13050029 13050031 13050032 13050033
13050036 13050037 13050038 13050039 13050041 13050042 13050043 13050044 13050046 13050047
13050049 13050050 13051006 13051007 13051008 13051009 13051010 13051011 13051012 13051015
13051016 13051017 13051019 13051020 13051021 13051022 13051023 13051024 13051026 13051028
13051068 13051069 13051070 13051071 13051072 13051073 13051074 13051080 13051081 13051083
13051085 13051086 13051087 13051088 13051092 13051093 13051095 13052001 13052002 13052003
13052004 13052005 13052009 13052010 13052011 13052012 13052013 13052014 13052015 13052016
13052017 13052018 13052019 13052020 13052021 13052022 13052036 13052037 13052039 13052042

13052043 13052045 13052048 13052050 13052051 13052052 13052053 13052054 13052056 13052061
13052088 13053004 13053005 13053006 13053007 13053012 13053013 13053015 13053027 13053028
13054022 13054023 13054044 13054045 13054060 13054061 13054062 13054063 13054064 13054065
13054066 13054068 13054069 13054070 13054084 13054085 13055001 13055004 13055006 13055007
13055008 13055009 13055010 13055011 13055014 13055015 13055016 13055017 13055018 13055019
13055020 13055021 13055022 13055023 13055024 13055035 13055036 13055037 13055038 13055039
13055068 13055070 13055072 13055073 13055075 13055076 13055080 13055081 13055082 13055086
13055087 13056005 13056007 13056008 13056020 13056021 13056022 13056023 13056024 13056025
13056026 13056027 13056028 13056029 13056030 13056031 13056033 13056034 13056035 13056037
13056038 13056039 13057005 13057006 13057007 13057008 13057009 13057010 13057011 13057014
13057015 13057016 13057017 13057018 13057019 13057021 13057022 13057023 13057024 13057025
13057026 13057027 13057044 13057045 13057046 13057047 13057048 13057049 13057050 13057051
13057052 13057053 13057055 13057056 13057057 13057058 13058002 13058008 13058015 13058016
13058017 13058018 13058025 13058026 13058028 13058029 13058030 13058031 13058032 13059005
13059006 13059007 13059008 13059009 13059010 13059011 13059012 13059013 13059014 13059015
13059016 13059017 13059018 13059019 13059020 13059021 13059022 13059023 13059025 13059026
13059027 13059076 13059077 13059078 13059079 13059080 13059082 13059083 13059084 13059085
13059086 13059087 13060001 13060002 13060003 13060008 13060009 13060010 13060011 13060012
13061024 13061025 13061026 13061029 13061030 13061031 13061035 13061054 13061055 13061059
13061060 13061061 13062001 13062002 13062004 13062005 13062006 13062007 13062013 13062025
13062026 13062028 13062029 13062049 13062050 13062052 13062059 13062060 13062061 13062062
13062063 13063009 13063010 13063011 13063020 13063022 13063023 13063030 13063031 13063032
13063033 13063034 13063035 13063036 13063053 13063054 13063062 13063063 13063065 13063067
13063068 13063071 13063072 13063073 13063074 13063076 13064001 13064002 13064003 13064004
13064005 13064006 13064012 13064014 13064020 13064021 13064022 13064023 13064024 13064025
13064026 13064028 13064029 13064030 13064031 13064032 13064052 13064055 13064056 13064057
13064059 13064061 13064064 13064065 13064066 13064068 13064070 13064074 13064075 13065005
13065006 13065007 13065008 13065009 13065013 13065014 13065015 13065016 13065017 13065018
13065019 13065020 13065021 13065022 13065046 13065047 13065048 13065049 13065050 13065052
13065053 13065055 13065056 13065058 13065059 13065060 13066021 13066022 13066023 13066024
13066025 13066026 13066027 13066028 13066029 13066030 13066031 13066033 13066034 13066035
13066036 13066101 13066102 13066104 13066109 13066110 13067001 13067002 13067003 13067010
13067011 13067012 13067013 13067014 13067015 13067017 13068017 13068022 13068027 13068029
13068034 13068036 13068037 13068084 13068085 13068086 13068087 13068088 13068090 13069001
13069002 13069003 13069004 13069005 13069006 13069007 13069008 13069013 13069014 13069016
13069017 13069018 13069020 13069021 13069022 13069023 13069024 13069026 13069027 13069029
13069030 13069031 13069035 13069036 13069066 13069067 13069068 13069069 13069073 13070006
13070008 13070010 13070011 13070012 13070014 13070015 13070016 13070017 13070018 13070019
13070020 13070021 13070022 13070024 13070025 13070026 13070027 13070056 13070057 13070058
13070059 13070060 13070061 13071003 13071004 13071005 13071006 13071008 13071009 13071010
13071011 13071012 13071064 13072001 13072002 13072003 13072004 13072005 13072006 13072007
13072008 13072009 13072010 13072011 13072014 13072015 13072016 13072017 13072018 13072019
13072020

3 MC Event Generator

- Event generator: Pythia 6.4.28
- Extra parameters for event generator: Perugia 2012 tune, set PARP(90)=0.213
- Vertex Z, high, cm: **NONE**
- Vertex Z, low, cm: **NONE**
- Gaussian sigma Z, cm: 45 cm
- Gaussian sigma X, cm: 0.057
- Gaussian sigma Y, cm: 0.02

- Vertex offset in X, cm: $x0 + dxdz * vz$ with $x0$ and $dxdz$ from the database
- Vertex offset in Y, cm: $y0 + dydz * vz$ with $y0$ and $dydz$ from the database
- Vertex offset in Z, cm: 0 cm
- φ high, radian: 2π
- φ low, radian: 0
- η, high: 10
- η, low: -10
- Pt bin, low, GeV: Given in Figure 1
- Pt bin, high, GeV: Given in Figure 1

The following particle decays are to not be handled by Pythia:

- `mdcy(106, 1) = 0; // PI+ 211`
- `mdcy(116, 1) = 0; // K+ 321`
- `mdcy(112, 1) = 0; // K_SHORT 310`
- `mdcy(105, 1) = 0; // K_LONG 130`
- `mdcy(164, 1) = 0; // LAMBDA0 3122`
- `mdcy(162, 1) = 0; // SIGMA- 3112`
- `mdcy(169, 1) = 0; // SIGMA+ 3222`
- `mdcy(172, 1) = 0; // Xi- 3312`
- `mdcy(174, 1) = 0; // Xi0 3322`
- `mdcy(176, 1) = 0; // OMEGA- 3334`
- **`mdcy(102, 1) = 0; // PI0 111`**
- **`mdcy(109, 1) = 0; // ETA 221`**
- **`mdcy(167, 1) = 0; // SIGMA0 = 3212`**

Figure 1: Events required in each partonic p_T bin

Bin, GeV – GeV	Number of events
2 – 3	3M
3 – 4	3M
4 – 5	3M
5 – 7	3M
7 – 9	3M
9 – 11	3M
11 – 15	3M
15 – 20	3M
20 – 25	3M
25 – 35	3M
35 – 45	2M
45 – ∞	1M
total	33M