***Summary***:

*E0p01\_amaxb*

Amaxs=[0.25, 1, 2, 3], amaxw = [1,2,3,4], mdot = [3e-8, 5e-8, 7e-8, 9e-8, 1e-7], Tdisk = [1400, 1500, 1600], rd and mu fixed (60, 0.58), amaxb = [1mm, 1cm], eps = [0.01]

*E0p01\_fineAmaxs*

Amaxs=[0.1, 0.25, 1, 2, 3, 4, 5, 10, 100], amaxw = [0.1, 0.25, 1, 2, 3, 4, 5, 10, 100], mdot = [2.5e-8, 3e-8, 3.25e-8, 3.5e-8, 3.75e-8], Tdisk = [1400], rd and mu fixed (60, 0.58), amaxb = [1mm, 1cm], eps = [0.01]

*E0p001\_fineAmaxs*

Amaxs=[0.1, 0.25, 1, 2, 3, 4, 5, 10, 100], amaxw = [0.1, 0.25, 1, 2, 3, 4, 5, 10, 100], mdot = [3.25e-8, 4e-8, 6.25e-8, 7e-8, 7.75e-8], Tdisk = [1400], rd and mu fixed (60, 0.58), amaxb = [1mm, 1cm], eps = [0.001]

*E0p01\_fineCheck*

Amaxs=[3], amaxw = [1], mdot = [2.5e-8, 3e-8, 3.25e-8, 3.5e-8, 3.75e-8], Tdisk = [1400], rd=[55, 57, 60, 62, 65], mu = [0.56, 0.57, 0.58, 0.59, 0.6], amaxb = [1mm, 1cm], eps = [0.01]

*E0p01\_fineCheck2*

Amaxs=[3], amaxw = [1,2,3,4,5], mdot = [2.5e-8, 3e-8, 3.25e-8, 3.5e-8, 3.75e-8], Tdisk = [1400], rd=[58,60,62], mu = [0.5, 0.58], amaxb = [1mm, 1cm], eps = [0.01]

*E0p0001\_mdot*

Amaxs=[0.1,0.25,1,2,3], amaxw = [1], mdot = [5e-8, 5.5e-8, 6.5e-8, 7e-8, 8e-8,9e-9,9.5e-8,1e-7,1.5e-7, 1.86e-7], Tdisk = [1100], rd = [60, 62, 65], mu = [0.34, 0.4, 0.45, 0.5], amaxb = [1mm, 1cm], eps = [0.0001]

*e0p01\_mdot4e-7*

Amaxs=[100], amaxw = [100], mdot = [3.5e-8, 3.75e-8, 4e-8, 4.25e-8, 4.5e-8, 4.75e-8], Tdisk = [1400], rd=[60,65,70,75,80,85], mu = [0.5, 0.58], amaxb = [1mm, 1cm], eps = [0.01]

*E0p01\_mdotM*

Amaxs=[100], amaxw = [0.25, 1,2,3,4,5], mdot = [4e-8, 4.5e-8, 5e-8, 5.5e-8, 6e-8, 6.5e-8, 7e-8], Tdisk = [1400, 1500, 1600], rd = [55, 58, 60, 62, 65], mu = [0.56, 0.55, 0.58, 0.62], amaxb = [1mm, 1cm], eps = [0.01]

*E0p01\_mdotML*

Amaxs=[100], amaxw = [0.25, 1,2,3,4,5], mdot = [6.5e-8, 6.6e-8, 6.7e-8, 6.8e-8, 6.9e-8, 7e-8], Tdisk = [1400], rd = [58, 60, 62], mu = [0.56, 0.58, 0.6], amaxb = [1mm, 1cm], eps = [0.01]

*E0p01\_mu*

Amaxs=[5,10, 100], amaxw = [1], mdot = [3e-8, 4e-8, 5e-8, 5.5e-8, 6.5e-8], Tdisk = [1100], rd = [55,57,60,62,65,67], mu = [0.574, 0.5, 0.423, 0.342], amaxb = [1mm, 1cm], eps = [0.01]

*E0p001\_mu*

Amaxs=[1,2,3,4], amaxw = [1], mdot = [3e-8, 4e-8, 5e-8, 5.5e-8, 6.5e-8], Tdisk = [1100], rd = [50,55,60,65,70,75,80], mu = [0.574, 0.5, 0.423, 0.342], amaxb = [1mm, 1cm], eps = [0.001]

+

Amaxs=[1,2,3,4], amaxw = [1], mdot = [3e-8, 4e-8, 5e-8, 5.5e-8, 6.5e-8], Tdisk = [1100], rd = [50,55,60,65,70,75,80], mu = [0.3, 0.259, 0.174], amaxb = [1mm, 1cm], eps = [0.001]

*E0p001\_mu2*

Amaxs=[1,2,3,4], amaxw = [1], mdot = [3e-8, 3.5e-8, 4e-8, 4.5e-8, 5e-8, 5.5e-8, 6.5e-8, 7e-8, 8e-8], Tdisk = [1100], rd = [60, 62, 65], mu = [0.34, 0.4, 0.45, 0.5], amaxb = [1mm, 1cm], eps = [0.001]

*E0p01\_outer1*

Amaxs=[100], amaxw = [1,2,3,4,5,10,100], mdot = [6.5e-8, 6.6e-8, 6.7e-8, 6.9e-8, 7e-8], Tdisk = [1400], rd = [60, 61, 62, 63, 64, 65, 66, 67], mu = [0.5, 0.53, 0.54, 0.55, 0.56, 0.57, 0.58, 0.59, 0.6], amaxb = [1cm], eps = [0.01]

*E0p01\_rdB*

Amaxs=[10, 100], amaxw = [1], mdot = [4e-8, 4.25e-8, 4.5e-8, 4.75e-8, 5e-8, 5.25e-8, 5.5e-8, 5.75e-8], Tdisk = [1100], rd = [63,65,67,69,71,73,75,77,79], mu = [0.58], amaxb = [1mm, 1cm], eps = [0.01]

*E0p001\_rdB*

Amaxs=[2,4,5,10,100], amaxw = [1], mdot = [2.5e-8, 3e-8, 3.5e-8, 4e-8, 4.5e-8, 5e-8, 5.5e-8, 6e-8], Tdisk = [1100], rd = [63,65,67,69,71,73,75,77], mu = [0.58], amaxb = [1mm, 1cm], eps = [0.001]

*E0p001\_rdB2*

Amaxs=[2], amaxw = [1], mdot = [5e-8, 5.5e-8, 6e-8, 6.5e-8, 7e-8, 7.5e-8, 8e-8, 8.5e-8,9e-8], Tdisk = [1100], rd = [63,65,67], mu = [0.58], amaxb = [1mm, 1cm], eps = [0.001]

*E0p01\_wall*

Amaxs=[100], amaxw = [1,2,3,4,5,10,100], mdot = [6.75e-8, 7e-8], Tdisk = [1000, 1100, 1200, 1300, 1400, 1500, 1600], rd = [60, 62], mu = [0.5, 0.58], amaxb = [1cm], eps = [0.01]

*E0p001\_wall*

Amaxs=[1,3,5,10,100], amaxw = [1,3,5,10,100], mdot = [3.25e-8, 4e-8, 5e-8, 6.25e-8, ], Tdisk = [1000,1050,1100,1150,1200,1250,1300,1350,1400], rd = [60], mu = [0.58], amaxb = [1cm], eps = [0.001]

*E0p01\_wall2*

Amaxs=[100], amaxw = [1,2,3], mdot = [4e-8, 4.5e-8, 5e-8, 5.25e-8, 5.5e-8, 5.75e-8, 6e-8, 6.25e-8, 6.5e-8], Tdisk = [1100, 1150, 1200, 1250, 1300], rd = [60], mu = [0.58], amaxb = [1mm, 1cm], eps = [0.01]

*E0p01\_wall3*

Amaxs=[100], amaxw = [1], mdot = [4.5e-8, 5e-8, 5.25e-8, 5.5e-8, 5.75e-8, 6e-8, 6.25e-8], Tdisk = [1100, 1150, 1200, 1250], rd = [57,58,59,60,61,62,63], mu = [0.56, 0.57, 0.58, 0.59, 0.6], amaxb = [1cm], eps = [0.01]

*mdot\_b*

*mdot\_fine\_high*

Amaxs=[0.25, 1, 2, 3,4], amaxw = [0.25, 1, 2, 3,4], mdot = [1e-7, 1.08e-7, 1.15e-7, 1.23e-7], Tdisk = [1400], rd and mu fixed (60, 0.58), amaxb = [1mm, 1cm], eps = [0.0001]

*mdot\_fine\_low\_eps001*

Amaxs=[0.25, 1, 2, 3,4], amaxw = [0.25, 1, 2, 3,4], mdot = [2.5e-8, 3.25,e-8, 4e-8, 6.25e-8, 7e-8, 7.75e-8], Tdisk = [1400], rd and mu fixed (60, 0.58), amaxb = [1mm, 1cm], eps = [0.001]

*mdot\_fine\_low\_eps0001*

Amaxs=[0.25, 1, 2, 3,4], amaxw = [0.25, 1, 2, 3,4], mdot = [4.75e-8, 5.5e-8, 8.5e-8, 9.25e-8], Tdisk = [1400], rd and mu fixed (60, 0.58), amaxb = [1mm, 1cm], eps = [0.0001]

*mdothigh\_amax\_eps2*

Amaxs=[0.1, 0.25, 1, 5 ,10,100], amaxw = [0.1, 0.25, 1, 5 ,10,100], mdot = [1e-7, 1.48e-7, 1.86e-7], Tdisk = [1400], rd = [60], mu = [0.58], amaxb = [1mm, 1cm], eps = [0.0001]

*mdotlow\_amax\_eps2*

Amaxs=[0.1, 0.25, 1, 5 ,10,100], amaxw = [0.1, 0.25, 1, 5 ,10,100], mdot = [2.5e-8, 5.01e-8, 9e-8], Tdisk = [1400], rd = [60], mu = [0.58], amaxb = [1mm, 1cm], eps = [0.001, 0.0001]

*rdB\_mdotL\_amaxsL*

Amaxs=[0.25], amaxw = [1], mdot = [3e-8, 5e-8, 6e-8, 7e-8], Tdisk = [1400], rd =[75, 77, 80, 83, 85, 90, 100] , mu = [0.58], amaxb = [1mm, 1cm], eps = [0.001, 0.0001]

*rdB\_mdotL\_amaxsL\_test*

Amaxs=[0.25, 1], amaxw = [0.25, 1], mdot = [4e-8, 5e-8, 6e-8, 7e-8, 8e-8], Tdisk = [1400], rd =[68, 69, 70, 71, 72] , mu = [0.56, 0.57, 0.58, 0.59], amaxb = [1cm], eps = [0.001, 0.0001]

*rdB\_mdotL\_eps0p0001\_mu*

Amaxs=[1,2], amaxw = [2,3,4], mdot = [7.5e-8, 8e-8, 9e-8, 1e-7, 1.86e-7], Tdisk = [1400,1500], amaxb = [1cm], eps = [0.0001], rd = [70, 80, 90, 100, 150], mu = [0.55, 0.66, 0.77]

*rdB\_mdotL2*

Amaxs=[0.25], amaxw = [1], mdot = [7e-8, 8e-8, 9e-8, 1e-7, 1.86e-7], Tdisk = [1400], rd =[80, 90, 100, 110, 120, 130, 200, 300] , mu = [0.58], amaxb = [1mm, 1cm], eps = [0.001, 0.0001]

*rdB\_mdotS\_eps0p001\_mu*

Amaxs=[1,2], amaxw = [2,3,4], mdot = [3e-8, 4e-8], Tdisk = [1400,1500], amaxb = [1mm], eps = [0.001], rd = [60, 70,80], mu = [0.55,0.66,0.77]

*rdB\_mdotS\_eps0p001\_mu2*

Amaxs=[1,2], amaxw = [2,3,4], mdot = [3e-8, 4e-8, 5e-8, 6.5e-8, 7.5e-8], Tdisk = [1400,1500], amaxb = [1mm], eps = [0.001], rd = [120, 140, 160], mu = [0.45, 0.48, 0.5, 0.55, 0.58]

*rdB\_mdotS\_mu*

Amaxs=[0.25], amaxw = [1], mdot = [3e-8, 4e-8, 5e-8, 6e-8, 7e-8, 8e-8], Tdisk = [1400], rd =[100, 150, 200, 250, 300, 350] , mu = [0.6, 0.65, 0.67, 0.7, 0.75], amaxb = [1mm, 1cm], eps = [0.001, 0.0001]

*rdB2\_mdotL\_amaxs*

Amaxs=[0.25], amaxw = [1], mdot = [2e-8, 3e-8, 4e-8], Tdisk = [1400], rd =[130, 150, 180, 200, 230, 250, 300], mu = [0.58], amaxb = [1mm, 1cm], eps = [0.001, 0.0001]

*rdS\_mdotL\_eps0p0001\_mu2*

Amaxs=[0.1, 0.25], amaxw = [2,3,4], mdot = [7.5e-8, 8e-8, 9e-8, 1e-7, 1.86e-7], Tdisk = [1500, 1600], amaxb = [1cm], eps = [0.0001], rd = [60, 80, 100], mu = [0.45, 0.48, 0.5, 0.55, 0.58]

Small mdot grids

1. Mdot Small, eps = 0.0001 -> mdot=[2.5e-8, 3.25e-8, 4e-8, 4.75e-8, 5.5e-8, 6.25e-8,7e-8, 7.75e-8, 8.5e-8, 9.25e-8], amaxs = amaxsw=[0.1,0.25,1,2,3,4], amaxb=[1mm, 1cm]
2. Mdot Small, eps = 0.001 -> mdot=[2.5e-8, 3.25e-8, 4e-8, 4.75e-8, 5.5e-8, 6.25e-8,7e-8, 7.75e-8, 8.5e-8, 9.25e-8], amaxs = amaxsw=[0.1,0.25,1,2,3,4], amaxb=[1mm, 1cm]

The grid consisted of …

1. Based on this, another with eps = [0.001, 0.0001], amaxs=0.25, amaxsw=1, amaxb = [1 cm, 1mm], mu=[0.58], rd=[75,77,80,83,85,90,100], mdot=[2E-8, 3E-8, 4E-8, 5E-8, 6E-8, 7E-8, 8E-8]
2. An epsilon=0.0001 grid with 1 cm grains, amaxs=amaxw=[0.25,1], mdot=[4E-8, 5E-8, 6E-8, 7E-8, 8E-8], rd = [68,69,70,71,72], mu = [0.56, 0.57, 0.58, 0.59]

**The grid consisted of…**

1. **eps = [0.001, 0.0001], amaxs=0.25, amaxsw=1, amaxb = [1 cm, 1mm], mu=[0.58], rd=[130,150,180,200,230,250,300], mdot=[2E-8, 3E-8, 4E-8, 5E-8, 6E-8, 7E-8, 8E-8]**

Med - High mdot grids:

The grid was mdot = [1E-7, 1.48E-7, 1.86E-7]; amaxs=amaxsw=[0.1, 0.25, 1, 5, 10, 100];rd=60, mu=0.58. amaxb=[1cm, 1mm]

1. Mdot Large -> mdot = [1E-7, 1.08E-7, 1.15E-7, 1.23E-7, 1.3E-7, 1.38E-7, 1.45E-7, 1.6E-7, 1.68E-7, 1.75E-7, 1.83E-7], amaxs = amaxsw=[0.1,0.25,1,2,3,4], amaxb=[1mm, 1cm]
2. eps = [0.0001], amaxs=0.25, amaxsw=1, amaxb = [1 cm, 1mm], mu=[0.58], rd=[80, 90, 100, 110, 120, 130, 200, 300], mdot=[7E-8, 8E-8, 9E-8, 1E-7, 1.86E-7]

The most successful ones were in size -> rd 60, mu 0.58, and 1.86E-7 mdot with amaxs=0.25ish

In emission, the center was most apt when mdot lower (6E-6) and cm grains. The one in bold represents THIS set. This set matches the central emission the best whether mm or cm grains…