Benchmark Point B1 NMSSM from arXiiv : 1408.1120

B.1 (Point ID Poi2a)	Scenario		
M_h, M_{H_s}, M_H	124.6 GeV	181.7 GeV	322.6 GeV
M_{A_s}, M_A	72.5 GeV	311.7 GeV	
$|S_{H_2 h_s}|^2, |P_{A_1 a_s}|^2$	0.90	1	
$\mu_{\tau\tau}, \mu_{bb}$	1.54	1.01	
$\mu_{ZZ}, \mu_{WW}, \mu_{\gamma\gamma}$	0.93	0.93	1.01
$\tan\beta, \lambda, \kappa$	1.9	0.628	0.354
$A_\lambda, A_\kappa, \mu_{\text{eff}}$	251.2 GeV	53.8 GeV	158.9 GeV
M_1, M_2, M_3	890 GeV	576 GeV	1219 GeV
A_t, A_b, A_τ	1555 GeV	-1005 GeV	-840 GeV
$M_{Q_3} = M_{t_R}, M_{b_R}$	1075 GeV	1 TeV	
$M_{L_3} = M_{\tau_R}, M_{\text{SUSY}}$	530 GeV	2.5 TeV	

Channels which contain at least two photons and which have X_section*BR>50fb
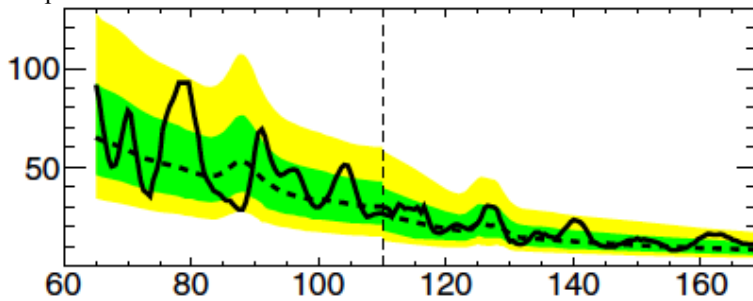The two (low energy) photons come from the A_s, which is only produced in the decays of H_3 and A_2.
There are always several A_s decaying into 2photons, which offers interesting searches.
Here the most interesting decays:

	13 TeV	8 TeV
X(ggHs)BR(Hs ! As As ! + b_ b)	67,33 fb	28,33
X(ggHs)BR(Hs ! As As ! + gg gg)	193,22 fb	81,29
X(ggH)BR(H ! hHs ! h + As As ! bb + 4gamma)	712,47 fb	247,41
X(ggH)BR(H ! hHs ! h + As As ! gamgam + 4 b)	248,02 fb	86,13
X(ggH)BR(H ! hHs ! h + As As ! tautau + 4gam)	74,6 fb	25,91
X(ggA)BR(A ! Hs As ! As As + As ! 6gam)	301,58 fb	103,45
X(ggA)BR(A ! Hs As ! As As + As ! bb + 4 gam)	157,64 fb	54,08

The values in col "13TeV" are the values from the paper, the last col for 8 TeV are the 13 TeV values scaled
with the ratio of the cross sections determined with SusHi.
The experimental limit for the 2photon fiducial X-section for 75 GeV is around 30 fb (Atlas PRL 113(2014)).
The main cuts are |eta|<2.37, E_T_gamma >22 GeV and isolation. One has to look at the distributions to see if
the point is in tension with this limit.

ATLAS PRL113 (2014)