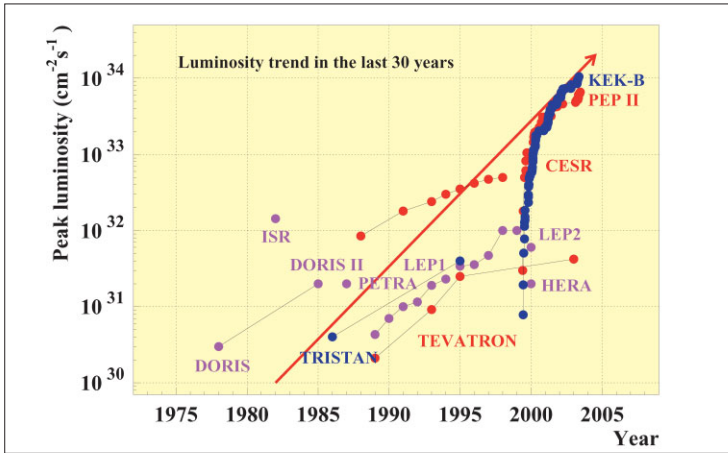




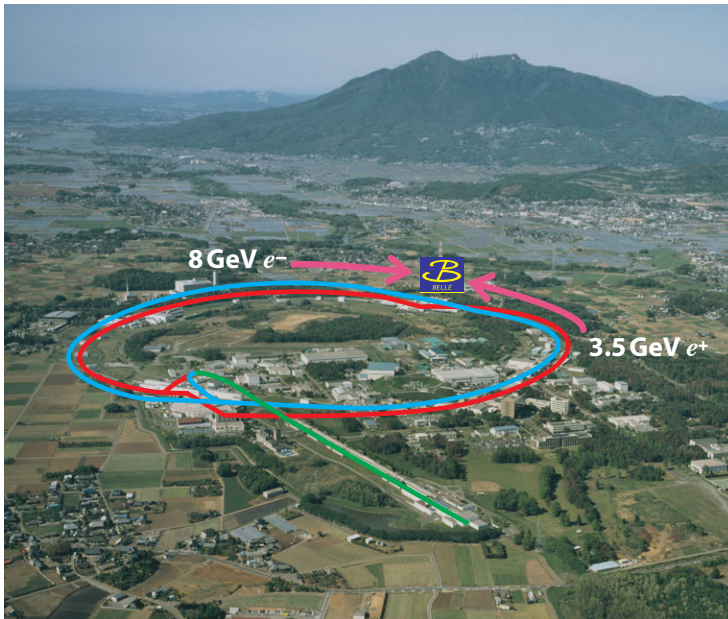
KEKB is first to achieve luminosity above 10^{34} !!

The peak luminosity of the KEKB asymmetric B factory exceeded $10^{34}/\text{cm}^2/\text{s}$: this enables Belle to accumulate more than a half million B-anti B pairs per day.

<http://kcgsvr1.kek.jp/>



	LER(e^+)	HER(e^-)	
Beam Energy	3.5	8	GeV
Horizontal Emittance	18	24	nm
Beam current	1410	1061	mA
Number of bunches	1284		
Bunch current	1.14	0.859	mA
Bunch spacing	2.4		m
Bunch trains	1		
Total RF voltage Vc	8.0	13.0	MV
Synchrotron tune ν_s	-0.0249	-0.0207	
Betatron tune ν_x / ν_y	45.506/43.545	44.513/41.586	
Beta's at IP β^*_x / β^*_y	59/0.58	58/0.7	cm
Estimated vertical beam size at IP σ^*_y	2.30	2.30	μm
Beam-beam parameters ξ_x / ξ_y	0.097/0.066	0.067/0.050	
Beam lifetime	105@1410	247@1061	min.@mA
Luminosity (Belle Csl)	10.308		$10^{33}/\text{cm}^2/\text{sec}$
Luminosity records per day / 7days/month	514/3096/11433		/pb

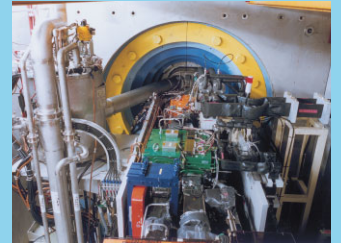


KEKB consists of a linear injector and two 3km-circumference storage rings.

Key components of KEKB



RF cavity with a large energy storage cavity



IR with a finite crossing angle

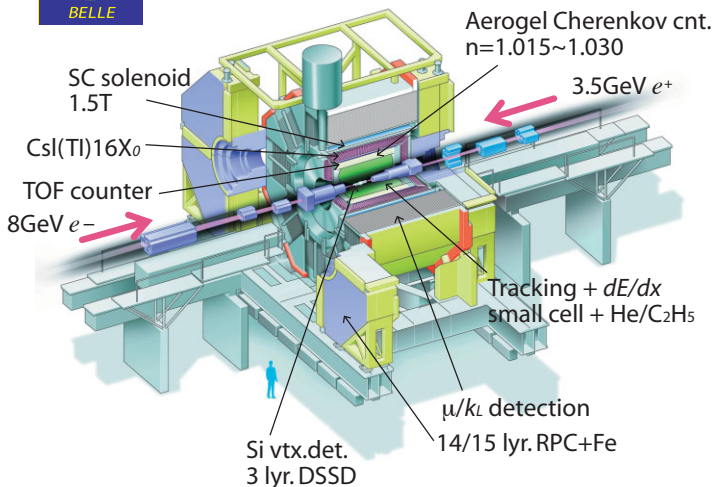


Superconducting RF cavity

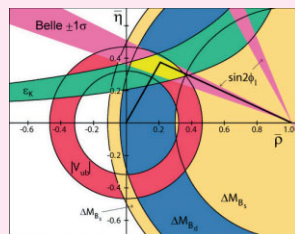
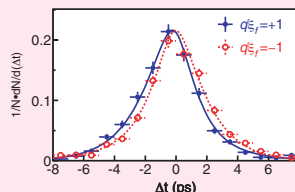


EPICS based control

Belle Detector



CP violation studied using the high luminosity



In 2001, Belle discovered CP violation in the B meson system, in 2002, it announced a precise measurement of the CP violating parameter, $\sin 2\phi_1 = 0.719 \pm 0.074 \pm 0.035$. This result is in agreement with the other experiments, and provides a confirmation of the Kobayashi-Maskawa model for CP violation. An updated result will be announced at this conference. (Tom Browder's talk at Session 5)