sites around the recent coastline. Based on morpho-sedimentary characteristics and radiocarbon ages, Holocene evolution is considered as follows: 1) Pleistocene surface around the paleo-Mekong river valley submerged around 10 to 8 ka due to sea level rose rapidly. 2) Around 8 to 6 ka sea level continued rising, particularly a delta initiation is identified around 8-8, 2 ka and developed in aggradation phase. 3) After submergence of the Pleistocene surface, mangrove swamp started to develop around 7-6 ka in the main part of the upper delta plain. Maximum Holocene transgression occurred around 6 ka and its coastline located nearby border of Vietnam and Cambodia. 4) Tide dominated delta prograded from 6 to 3 ka in the upper delta plain. 5) Tide- wave dominated delta progradation from the last 3 ka characterised by beach ridges plain in the lower delta plain. 6) Tide dominated delta progradation characterised by widespread mangrove swamps in Ca Mau deltaic margin from the last 3 ka due to northeast monsoon activity (Ta et al., 2005).

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Water circulation simulation in Yangtze River-East China Sea system: effects of Three Gorges Dam

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1. Aims: Environment simulator which consists of Atmosphere, Ocean and Land Surface simulation has been developed in the Graduate School for International Development and Cooperation (IDEC), Hiroshima University. This simulator is applied to simulate the water circulation and material transport and transformation in the Yangtze River Basin, Estuary and East China Sea where both ocean and river water environment affected by dam discharge from the Three Gorges Dam are discussed.

2. Method:

(1) Atmospheric Simulation: Meso-scale meteorological simulation (rainfall distribution) with MM5,

(2) Land Surface Vegetation Model: interaction with vegetation and atmosphere with SOLVEG2,

(3) Hydrological Simulation: water quality and discharge simulation with HSPF (DEM: HydroSHEDS)

(4) Ocean Simulation: non-hydrostatic ocean current simulation with MITgcm (Mellor-Yamada TKM).

(5) Computational method: Dam discharge Q_T is assumed. Yangtze River Discharge Q_R

Fig.1 Land-use data estimated by ALOS satellite PALSAR will be evaluated by hydrological simulation. Ocean and river water behavior is simulated by MITgcm by using river dischargeQ_R. Initial and boundary condition of potential temperature, salinity, zonal and meridional velocities are imposed by JCOPE 1/12 deg ocean reanalysis data.

3. Expected Result

: Suitable dam discharge which can maintain the environment both in river and ocean waters will be discussed (minimum discharge and its time sequence).