气象与水文

上海位于北亚热带东亚季风盛行的地区，气候温和、湿润，雨量适中，四季分明，冬夏长，春秋短。年平均气温15.2～15.9℃，一月最冷，平均气温3.1～3.9℃；七月最热，平均气温27.2～27.8℃。年降水量1048～1138毫米，年降水日129～136天，全年60%的雨量集中在5～9月。年日照时数1872～2115小时，年平均相对湿度77%～83%。年平均风速市区2.9米／秒、郊区3.1～3.7米／秒，风速以春季最大，冬季次之，秋季最小，夏季盛行东南风，冬季多为西北风。城市气温在空间分布上存在“热岛效应”，即市区气温高于郊区，气温最大差值可达4.8～6.8℃。

上海地区属长江水系，江、海、河、湖相间，水网交织，水资源总量丰富。江、河、湖泊、坑塘水面计1800平方公里，陆域水面积691平方公里，占陆地总面积的10.9%。河网密度为6～7公里／平方公里，平均每隔100～300米就有一条河道。世界著名的长江流经本区入海，境内全长148公里，多年平均流量为28300立方米／秒；黄浦江和吴淞江（市区段称苏州河）是境内大河，黄浦江干流全长113.40公里，多年平均流量319立方米／秒，吴淞江全长125公里，汇入黄浦江，多年平均流量19立方米／秒；淀山湖是本区最大的天然湖泊，境内面积47.5平方公里（总面积为62平方公里），蓄水量约1.1亿立方米，多年平均调蓄0.69亿立方米。上海地表水资源总量可达593.5亿立方米，人均占有水资源量约5240立方米／年。然而，境内地表水水质已受到不同程度的污染，尤其内陆河流的水质已达到严重污染程度，上海已列入水质型缺水城市。为此，上海正全力以赴地开展水环境的综合治理。

METEOROLOGY AND HYDROLOGY

Shanghai locates in northern subtropics and East Asia monsoon climate prevails. Abundant rainfall occurs every year. In Shanghai the four seasons are sharply distinct. Winter and summer are longer and spring and autumn are shorter. Yearly averaged temperature is from 15.2℃ to 15.9℃. January is the coldest month with average temperature from 3.1℃ to 3.9℃, and July is the hottest month with average temperature from 27.2℃ to 27.8℃. Yearly rainfall is from 1048mm to 1138mm, and yearly rainy days are from 129 days to 136 days. The rainfall from May to September is 60% of that of the whole year. The yearly sunshine time is from 1872 h to 2115 h, and the yearly averaged relative humidity is from 77% to 80%. The yearly averaged wind speed is 2.9m/s in urban and is from 3.1m/s to 3.7 m/s in suburbs. The wind speed is large in spring and is small in autumn. The southeast wind prevails in summer and northwest wind prevails in winter. Hot-island effect, i.e. urban temperature is higher than that of suburbs occurs and the major difference in temperature is from 4.8℃ to 6.8℃.

The Shanghai area belongs to Yangtze River Basin. The Yangtze River is alternate with other rivers and lakes. The total quantity of water resources is more plentiful. The water area of the Yangtze River and other rivers and lake is about 1800 km^2. The water area in land is about 691 km^2 and is 10.9% of total land area. The density of river net is 6−7km/km^2. The distance between two-river courses varies from 100m to 300m. The world famous river — the Yangtze River flows native land into the sea, and its length in Shanghai area is 148km, average annual discharge is about 28300m^3/s. The Huangpu River and Wusong River (also named as Suzhou river) are the two largest rivers in Shanghai. The Wusong River flows into the Huangpu river. The length of Huangpu River main-stream is 113.40 km and its average annual discharge is 319m^3/s. The length of Wusong River is 125 km with average annual discharge of 19m^3/s. The Dianshan Lake is the biggest lake in Shanghai area, and its area in Shanghai is 47.5km^2 (the total lake area is 62km^2) and is 110 million cubic meters of storage capacity, average annual exchanging storage capacity is 69 million cubic meters. The total surface water resources reach up to 59.35 billion cubic meters. Average water resource per capita is about 5240 m^3/a. Shanghai is short of good water quality because of the polluted surface water in different degree; especially the water quality of inland river. Now Shanghai is exerting all its strength to comprehensively treat the water environment.