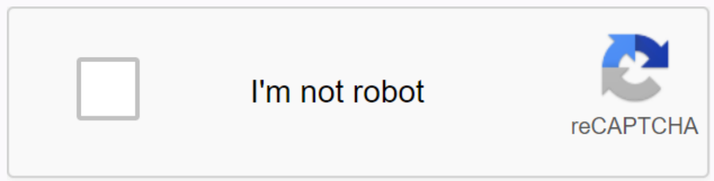

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Maritime tropical mt air masses are

AIR MASSES AND SOURCE AREAS Air mass is a huge amount of air with similar temperature and humidity characteristics. Temperatures and humidity vary gradually according to latitude, longitude and altitude over the entire air mass. Air masses gain their characteristic temperature and humidity by sitting in place on Earth for a certain period of time. This location is the source region. Air masses are named after their temperature and humidity characteristics. The moisture characteristic is derived from the type of surface above which the air mass is located. The two main surface differences on the ground are LAND and WATER. The air mass that sits above the water surface will experience a significant amount of evaporation, so it will be considered moist or moist. It's going to be called naval air mass. The naval air masses are marked with the lowercase letter m. The air mass sitting above the ground will have limited evaporation, so it will be considered dry. It will be called continental air mass, which is marked with the lowercase letter c. In the name of air mass, this description of moisture is given first. The second characteristic, the temperature property, is derived from the latitude of origin, since temperatures generally fall towards the pole. Air masses originating near the equator are EQUATORIAL, marked with a capital letter E. These are hot air masses. At a higher latitude there are tropical air masses, marked with a capital letter T. These are considered warm-air masses. At ever higher latitudes, polar air masses are marked with a capital letter P. These are considered cold or cold, depending on the season. The highest width of origin is called ARCTIC (southern hemisphere, Antarctica or AA), marked with the capital letter A. This air mass is considered very cold. The air mass is therefore named by a combination of its indication of humidity and temperature. With two terms for humidity and four terms for temperature, eight names are possible. These are: mE, mT, mP, mA, cE, cT, cP, cA (maritime equatorial, maritime tropical, maritime polar, maritime arctic, continental equatorial, continental tropical, continental polar, continental Arctic). In fact, there are only six different air masses. Since the intertropical convergence zone is known for strong precipitation, hot air can hold a lot of moisture and the equator does not have much soil, equatorial air is not dry. This means that cE air mass is not found; it's mE air, moist and hot. Very cool air with high width does not retain much moisture and does not have heavy evaporation or precipitation, so mA air is also not found. It's cA or very cold and dry. air name massdescription mE maritime equatorial moist and hot mT maritime tropical humid and warm cT continental tropical dry and warm mP maritime polar wet and cold cp continental polar dry and cold or dry Cold CA Continental Arctic Dry and Very Cold Areas of world resource are shown on the map below. Air mass weather results from the dominance of aviation matter. They are best associated with high pressure and anticycloons. Air mass weather means a small change in temperature and humidity, which will be experienced. Warm humid air mass can occur with daily surface heating, convection, and late afternoon thunderstorms. Night cooling can result in heat loss and fog. The weather will generally be described by the characteristics of the dominant air mass. Sea tropical air masses warm temperatures and rich in humidity Maritime tropical air masses come from the warm waters of the tropics and the Gulf of Mexico, where heat and humidity are transmitted to the skied air from the waters below. The northern movement of tropical air masses transports warm moist air to the United States, increasing the potential for rainfall. Tropical air masses are generally limited to southern states for most of the year. However, southerly winds from migrating cyclones occasionally carry tropical air mass north during the winter season. Below is a map of surface observations and the leading edges of tropical air mass rising north into the Ohio Valley has been highlighted in red. Southerly winds across the border mean continued transport of warm, humid air to the north. From these reports we can see that most stations in tropical air masses generally show relatively warmer temperatures, with higher dew point temperatures, and winds generally from the south. Note that on the other side of the red border, outside this air mass, the surface conditions are very different, indicating the presence of a completely different air mass. A large volume of air, which is characterized by similar temperature and humidity properties at a given altitude. It can cover many thousands of square kilometers horizontally and can extend several kilometers vertically (3-D piece of air); it can be as deep as the depth of the troposphere or shallow as 1 to 2 km deep. Horizontal changes in temperature and humidity usually exist within the air mass, but are small compared to the difference between air masses. Source region: a large area (several hundred thousand km2) where air can stagnate (light wind) long enough to acquire the thermal and moisture properties of the underlying surface. In summer, when the oceans are colder than the continents, semi-permanent high-pressure areas are formed; Bermuda High in the Atlantic Ocean; Pacific high in the Pacific Ocean In winter, semi-persistent low pressures form over the northern oceans; Icelandic bottom in the Atlantic Ocean; Aleutian Low in the Pacific Ocean See Figure 8.1 for Typical North American Air Mass Areas Continental Polar (cP) & Continental Arctic (cA) Cold bitterly cold) and dry; stable; cA air masses are colder than cP Originate through ice-and snowy areas of northern Canada & Alaska, where long, clear nights allow for strong radiation cooling of the surface in winter, outbreaks of bitterly cold air into the continental U.S. (e.g. Texas Blue Norther); Creates a lake effect of snow in late autumn and winter In summer, it can provide relief from heat waves. Cool and humid; unstable form over high latitudes above seawater; usually modified cP air mass from North Asia or AK Affects the west coast of the USA; Most often from the Pacific Ocean Atlantic mP are often colder than pacific mP, due to the smaller water size area. Warm and humid; usually unstable; subtropical bodies of water. The Gulf of Mexico, the Caribbean Sea and the Western Atlantic Ocean affect the eastern and central US. In winter, mT air is usually limited to gulf coast states. In summer, mT air can provide moisture for the monsoon via the SW-US Pineapple Connection: a sub-tropical current stream sends enough mT air from Hawaii to the western U.S. and is associated with El Nino; heavy rains and flooding in central and southern CA. Continental Tropical (cT) Hot, dry stable air in the air; conditionally unstable surface air; Usually coming from the southern Rocky Mountains & northern Mexican plateau Characterized by large daily temperature ranges (i.e. hot days and cold nights) It can set a dry line over the southern central US (especially TX & OK). Transition zone between two air masses of different densities (e.g. oil and water), due to the contrasts of temperature and humidity Polar and tropical air masses usually meet in the middle latitudes isotherms and isodrosotherms are usually tightly packed (due to nearby areas) near the frontal boundary. (Note: changing the altitude or changing the underlying surface [e.g. water to land, snow to bare ground, etc.] can lead to large temperature/dew point gradients in the air above) Queues tend to be found in low pressure troughs, and winds tend to converge on the front clouds, and precipitation usually accompanies frontogenesis queues: when frontal boundaries form or become stronger due to increased temperature contrast across the front frontal frontallysis: when the frontal boundary weakens and dissipates due to a decrease in temperature contrast across the anterior Anafront: front with clouds and seed in cold air, as with almost all warm fronts; crap behind the cold front katafront: front with clouds in the warm air; In front of the cold front Cold front: cold air moves towards the frontal boundary. Warm front: cold air moves away (i.e. retreats) from the frontal boundary. Stationary front: cold air moves parallel to the frontal boundary. Occlusion front: difficult to determine from the surface map; cold front overtook the warm front part on the surface (warm air air); cold occlusion and warm warm Dry line: a narrow border where there is a sharp horizontal change in humidity; front dew point; often the coating edge of the cT air mass; common in TX, OK & KS, especially during spring and early summer Upper-Level Front: formed when two air masses meet in the air (cold front in the air); modest to small temperature change, but a very sharp change in dew point (RH); air comes from the upper troposphere and the lower stratosphere; compare temperature and dew point data on graphs 700 mb and 500 mb Frontal Location Criteria Sharp temperature contrast at a relatively short distance Changes in air humidity content (as shown by significant changes in dew point) Shifts in wind direction Changes in pressure and pressure Clouds and precipitation patterns Cooler temperatures in front of the front; sharply warmer after the front passage dew point temperature of the radiator in front of the front; higher following frontal passage Wind has N to se component in advance; SE on SW under pressure decreases steadily as the front approaches; rises up the front, but can again fall OVC (-RA/-SN) in front of the front; partial clearing for (sometimes Cb/TSRA) Cold Air fence (take-off) occurs east of the mountain range; may disrupt the front Temps begins to lag in front; front located on the leading edge of the baroclinic zone Dew point temps turn sharply cooler (less humid) Wind has an SE on the SW component in advance; SW on NW under pressure drops in advance; rises sharply after the frontal passage cb / cu (TSRA / SHRA) can precede / accompany the front; Sc (SHRA) or CLR can follow Usually has cold / cold air on both sides of the front; cold<warm>cool; cold<warm>cold dew point temps usually in several degrees temps (ie. high RH) Sharp wind shift from E to S components W to N Pressure decreases steadily in advance, then steadily increases after passing usually OVC, with a slight precipice (-RA/-SN/-PL/-FZRA) on both sides of the front sharp temperature contrast on both sides of the front Sharp dew point contrast on both sides of the front wind E on the SW on the warm side of the front front; NW to NE on the cold side of the front pressure remains fairly stable Katafront: clouds + precipice on the warm side; Anafront: clouds + sorority on the cold side Warm to hot temperatures on both sides of the dry line Much lower (dryer) dew points on the west side; higher dew points on the eastern side of Wind E to SW before the dry line (heat/humidity); SW on NW for (warm / dry) Pressure drops in advance; rises for many times only CLR, but can initiate inclement weather (+TSRA/+FC) No significant change in surface temperatures No significant change in surface dew points Slight shift in the direction of the wind surface as it passes; from E to SE, maybe SE to SW Pressure drops in advance; rises in a row; surface trough can be noted that there is a sharp line of TSRA/SHRA, with CLR/SCT west of the line</warm> </warm>