* **installation Seismometer**
* not more than 5 m away from cliff edge if possible, not to close to trees
* digging a hole 1m deep and 1m wide
* trying to make a flat surface at the ground
* use of additional plant soil
* placing the slab (carré de béton), make sure it is settled 🡪 pushing it down
* slab needs to be very clean and smooth 🡪 no dirt on surface
* placing the seismo with the cable attached on the slab
* the seismo needs to be oriented precisely into N-S direction
* using a compass (compas de géologue) in N-S orientation over the hole and orientate the seismo in this direction
* afterwards the seismo needs to be leveled using the additional bubble at the middle of the top of the sismo (petite bulle qui est dans le sac de la valise du sismo avec les cartes SD)
* orientate yourself in a way that the feet of the seimo are in a triangle
* start with the two aligned screws using the upper screws to level
* after that using the single screw “on top” of the triangle to finally level the seismo
* after leveling, the lower screws have to be used to fix this position
* 🡪 before covering the seismo with soil-it is good to check that it is leveled with the centaur and that everything else works (aller sur page web->se connecter->c.f. voir p. 2 pour connexion à l’interface Centaur).
* if all is o.k., the hole with the seismo can be carefully filled with the original material and maybe the plant soil
* the soil should be carefully pushed and compressed a bit
* be carefull not to move the seismo
* also care is needed by burring the seismo-cable
* it’s necessary to dig a little trench beneath the grass until the box with the centaur and the battery
* after the seismo and the cable are buried, the hole should be covered with the original grass mat
* **installation of centaur and battery**
* in a distance of ca. 10 m the digitizer/centaur and the truck battery needs to be installed
* the distance should be far enough to not disturb the seismo
* the hole needs to be large enough to entirely bury the case
* a small trench needs to be digged from the seismo hole to the hole for the case
* the seismo cable needs to be buried beneath the grass mat within this little trench

**Centaur connections**

* the centaur needs to be connected:
* 1. with the seismo cable (extrémité rouge du câble noir va sur le sismo, l’autre embout va sur la vis du “sensor” sur le Centaur)
* 2. with the power cable to the battery (red cable for positive, clamps fit only one way)
* 3. with the GPS sensor
* 4. with the Ethernet cable to the external Toughbook
* 5. with a copper metal wire for grounding reasons
* 🡪 a 32 Fat formatted SD Card has to be insert into the SD card slot (bouchon à vis au-dessus de l’écriture Centaur)
* the centaur and the truck battery should be placed inside the case
* through the little hole on the side of the case, the seismo cable goes into the box and the GPS cable and the copper wire go out of the case
* the GPS needs to be placed a bit outside of the box but very shallow, beneath the gras matt (the GPS sensor should be placed into a ziploc bag before)
* the copper metal wire needs to be attached to the stick and place a bit further away from the box
* **web interface**
* Toughbook needs to be checked for energy consumption/ accu duration
* tipe in browser **IP address**: **169.254.33.33**
* this should open the web interface
* sur page d’accueil, tout doit clignoter en vert. Vérifier notamment si le sismo trouve des satellites (ça peut prendre 10-20 min). Sur le centaur, lorsque les GPS sont trouvés, time qui clignotait orange passe à vert.
* different pages and settings
* its good to take some sreen shots from the settings with the camera for later
* keeping all configured settings as they are
* Data: sample rate 100 Hz
* **page Sensor**: Discovery: **admin** and **Cl1ffs**
* -> Sensor **Trillium Compact** klicken
* Current state of health -> channels -> mass position -> green should be leveled ->case tilt 0° -> clique sur disable quand le sismo est bien nivelé
* page Seismometer control -> use control line…. leave everything like it is
* page Events -> not important
* page waveform: good to check the signal
* **page maintenanc**e: 🡪 **archive files** 🡪 store 🡪 2016 and select the date and the single files
* is better to download the single files separately and manually mais peut-être que Manu va trouver une solution pour améliorer cela.
* 🡪 **is better to store the data on an external hard drive**!
* 🡪 **only for use in the office**! If the centaur needs to be shutted down (only necessary in the office!) you have to use the **maintenance page** and **shut down**!
* **in the field: if everything is fine and working (all lights are blinking green)- you just plug out the Ethernet cable out of the Centaur and leave everything as it is (all lights blinking green except for link)**
* **it is very important not to shut down!**
* after that, the case should be carefully closed and buried beneath the grass matt

**Pour changer les batteries :**

- interface Centaur

- télécharger les données

- débrancher le câble power du Centaur

- changer les batteries

- rebrancher le câble power

- cela redémarre automatiquement

Centaur Digital Recorder

SM 001504

Model: CTR 2-35-8

ASM: 17956 rev 5

Local IP: 169.254.33.33

* the seismometer, the centaur, the grounding stick and other little necessary things (cables, hooks and strings and batteries) are stored in Claires office
* shovels, bucket, plastic blanket, slab … are stored in the “aquarium” in the basement
* **things needed for installation:**

 hardware:

* shovels
* bucket
* plastic blanket
* small shovel
* pickaxe
* sledgehammer
* normal hammer
* **slab**!
* plant soil
* string/ thin rope
* tape measure/meter stick
* gloves
* tape, knife
* different tools, toolbox
* material for fence?

software:

* tough book fully charged
* seismometer case with centaur and cables ect.
* truck battery fully charged
* case for centaur and battery
* lightening stick
* box with cables, string and copper wire
* compass!, GPS