

ETAPES DE REALISATION SONORE

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Cours de base/Création sonore

Dess jeux/Angoulême/2002

PLAN

- 1. Un projet ,ses objectifs ,ses contraintes,
ses phases de réalisation
Suivi d'un script et description de fonctions**
- 2. Constitution d'une palette sonore
et aquisition**
- 3. Edition ,montage et synchronisation**
- 4 .Transformations**
- 5. Mixage**

1

**DESCRIPTIF D'UN PROJET
DE SES OBJECTIFS
ET DE SES ETAPES DE REALISATION**

1.1 Quelques questions

A Pour quel public et quel type d'écoute?

Écriture linéaire ou non?

Contraintes du support?

B Éléments sonores prévus (commentaires, musique, ambiances, bruitages... sons inouïs)?

Rôle attendu des éléments de la bande son ?

C Temps de réalisation et moyens mis à disposition ?

Possibilité d'avoir un vrai suivi de projet

incluant le son en amont?

Possibilité de superviser les différentes étapes de réalisation sonore?

1.2 Trois situations différentes (1)

Exemple 1 pour un documentaire de Jean Baronnet "Pompéi"

A Diffusion télé, mono ou stéréo, version internationale puis selon chaque pays

Ecoute télé, écoute appliquée

B Virgules sonores évoquant l'antiquité à articuler avec le commentaire et les sons synchro du tournage

Recherche de sons paysagés complémentaires sur banques de sons

Séquences instrumentales avec transformations en postproduction

C Intervention après montage des images mais montage son avec la monteuse image

1.2 Trois situations différentes (2)

Exemple 2 pour un CD ROM réalisé par Henri Colomer et Xavier Philippe
“Une trêve“

A Distribution réduite pour public intéressé et donc écoute attentive et peut-être réduite

Contraintes importantes de taille de fichiers et en mono

B Boucles courtes, à partir de quelques sons entrant en résonance avec le climat des images, empathiques ou anempathiques

(résonance électrique, mer, vent, avion), famille de sons minimalistes.

C Livraison d'échantillons sur DAT après réception de l'avancée des différentes séquences, sans synchronisation.

1.2Trois situations différentes(3)

**Exemple 3 :Jeux vidéo LES CHEVALIERS D'ARTHUR/ Edition
Cryo**

Sound Manager: Jean Baptiste Merlan

Voir Document joint

.

2

CONSTITUTION D'UNE PALETTE SONORE

Types de documents

2.1 Description des éléments cherchés
(cf/classification cours 1)

2.2 Documents préexistants
sur CD, Internet et acquisition

2.3 Documents à créer par enregistrement, synthèse ou techniques mixtes(éléments composites avec montage , et transformations)

3

MONTAGE ET ECRITURE

Aspects du montage

3.1. Edition

Logiciel d 'édition audio et fonctionnalités

3.2. Ecriture

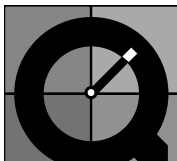
Mise hors contexte / Fragmentation /syntaxe et sémantique

Axe horizontal et vertical, épaisseur et lisibilité du message

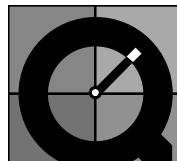
Silence, charnières

Ponctuations et effets de récurrence (retours d 'un motif ou bouclage)

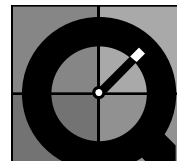
clip4



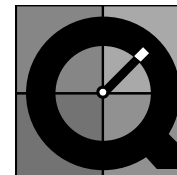
clip2



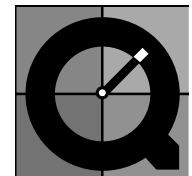
clip3



clip8



clip8.2



4

TRANSFORMATIONS

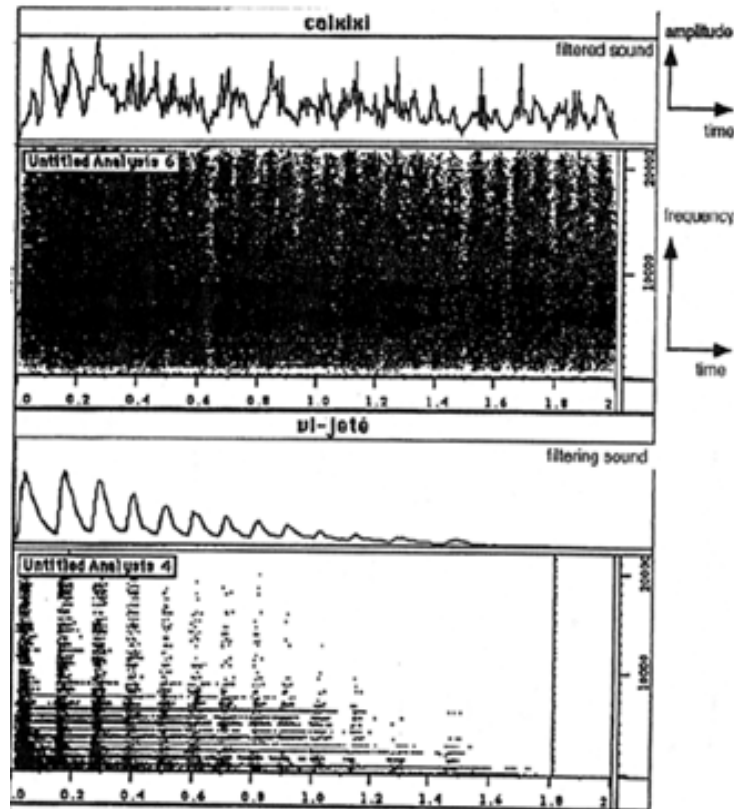
4.1.Transformations de timbre

Tracé spectral /sonagramme /représentation sur Audiosculpt

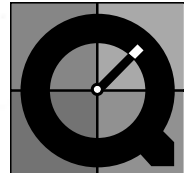
Egaliseur graphique et égaliseur paramétrique

Séparation des éléments bruités et des éléments harmoniques de la voix sur SoundHack

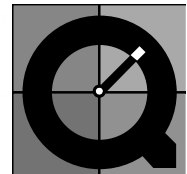
Sonagramme/contenu spectral



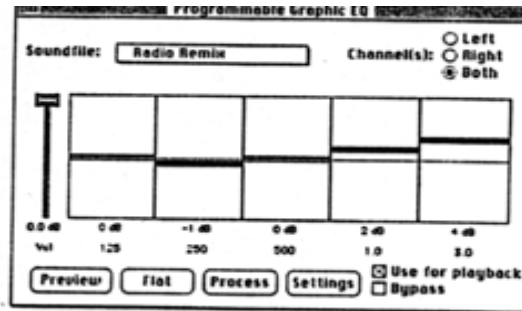
caix



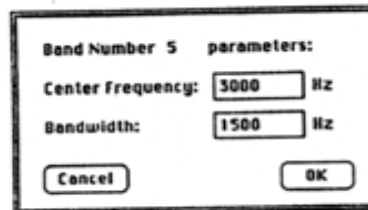
violon



Egaliseurs

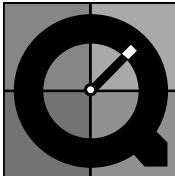


The Graphic EQ window

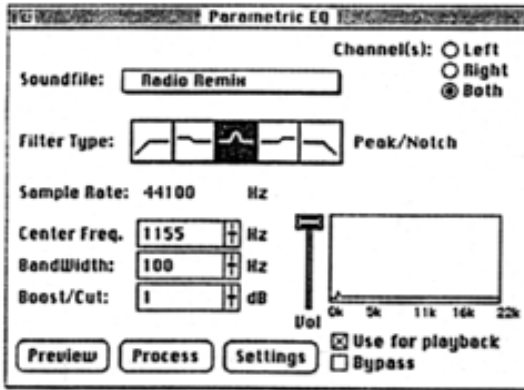
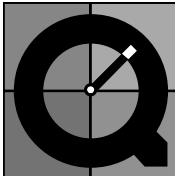


Changing the Frequency and/or Bandwidth for a Graphic EQ band

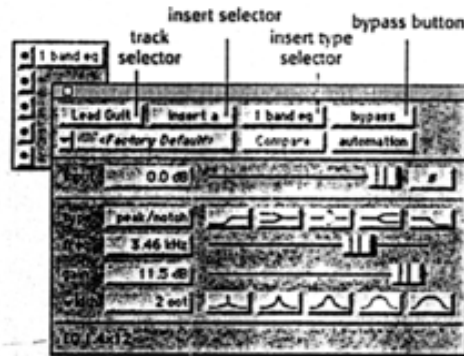
klang



Klang
Lowshelf-10dbà3khz



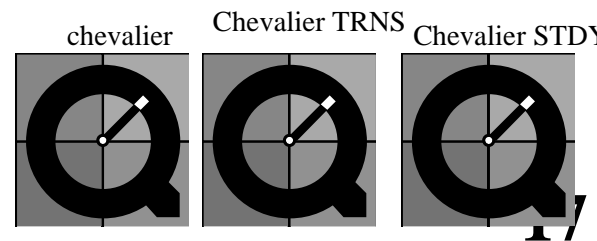
The Parametric EQ window



The Inserts/Send Editor (the 1-band EQ Plug-In is shown)

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Séparation des éléments bruités et des éléments harmoniques de la voix sur SoundHack



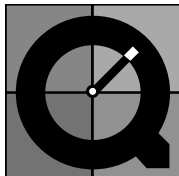
4.2. Transformations temporelles et transpositions

Rappel du lien entre vitesse et hauteur

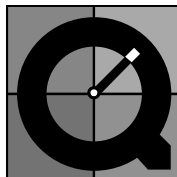
Variations constantes et variations discontinues

Transpositions avec ou sans corrections temporelles

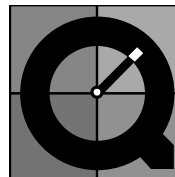
bounceklang



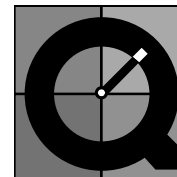
Bounceklang vary dil



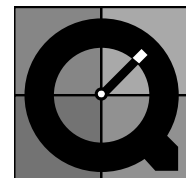
gavotte



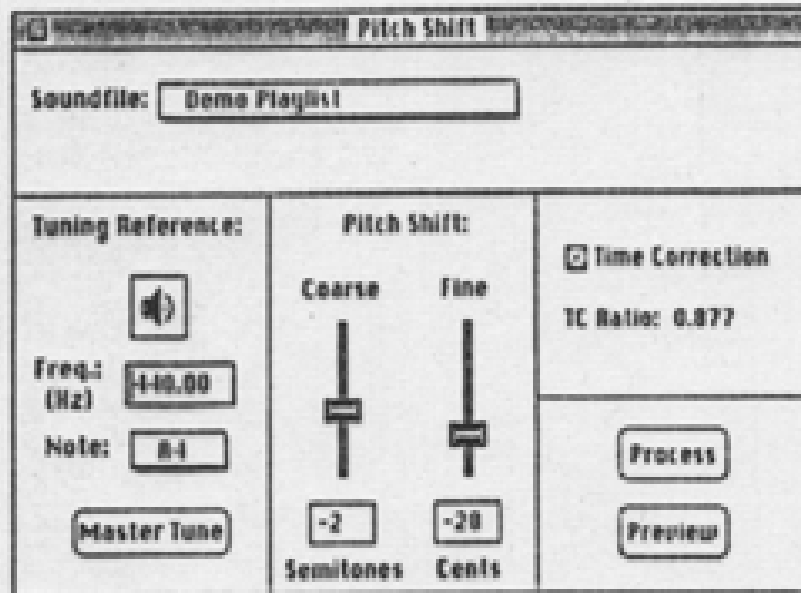
Gavotte dil2



Gavotte dil7



Pitch shift



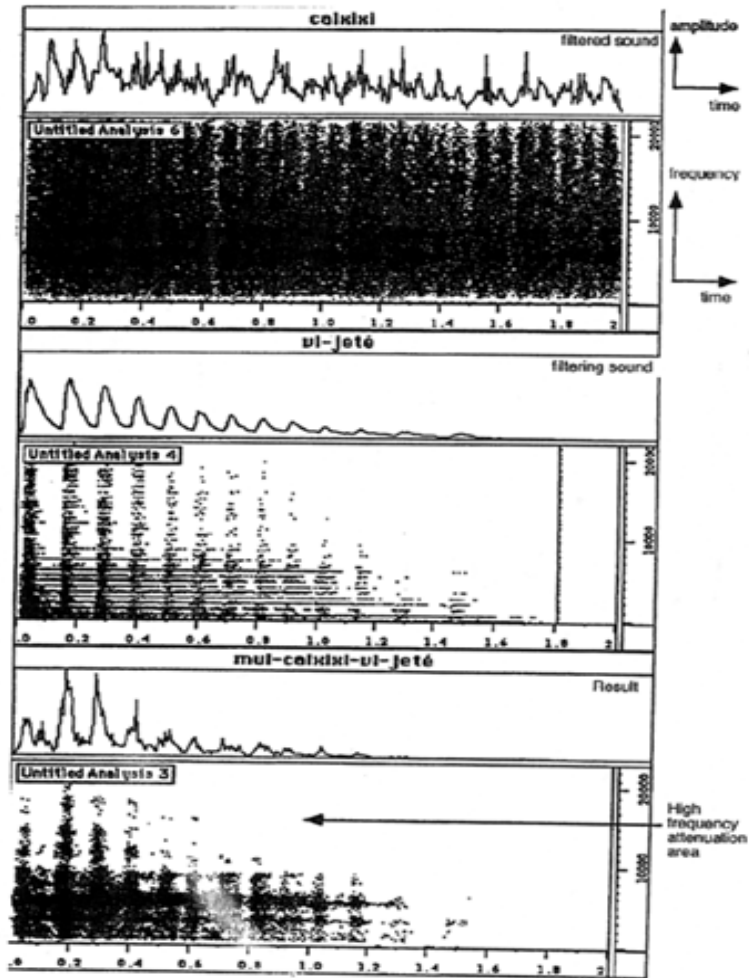
The Pitch Shift window

4.3 Hybridation et morphing

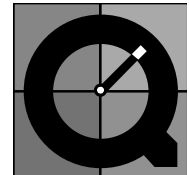
Synthèse source filtre sur Audiosculpt

Synthèse croisée sur Audiosculpt

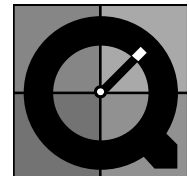
Synthèse source filtre sur Audiosculpt : exemple 1



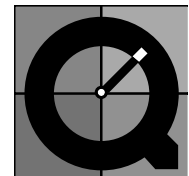
caix



vi

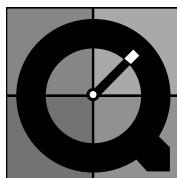


Multi-caix_vi

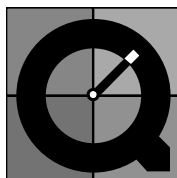


Synthèse source filtre sur Audiosculpt :exemple2

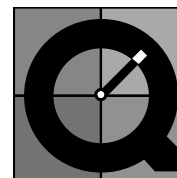
harpe



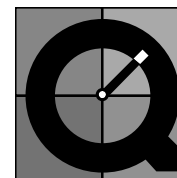
Trompette-va



Mult harpe-tp



Mult tp- harpe



Synthèse croisée sur Audiosculpt

exemple1

In the dialog box which opens, select the sound files and adjust the cross-synthesis parameter values. Then, click on **Analysis Parameters** to enter the analysis parameter values, as in the case of the source-filter cross-synthesis.

Generalized Constant Cross Synthesis

Sound 1 cor-anglais
Sound 2 vc2

amplitude cofactor 0.0

amplitude scale factors
1.0
1.0

phase scale factors
1.0
1.0

Analysis Parameters Cancel
Process in place
Process and Save

Using dynamic parameters with a cross-synthesis is much like using them with time-stretching or transposition. Begin by creating a text file with the crossing parameters. Next, make the window containing the text the active window and select the type of cross-synthesis from the **Processing** menu. The following dialog box will open:

Time-varying Generalized Cross Synthesis

Sound 1 cor-anglais
Sound 2 vc2

Analysis Parameters Cancel
Process in place
Process and Save

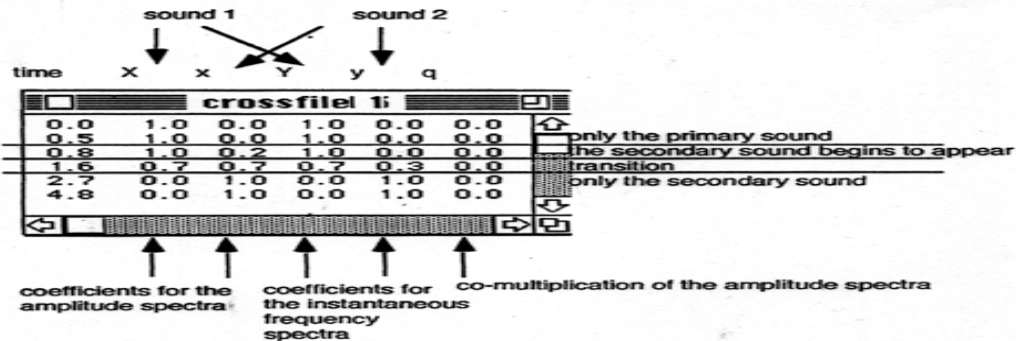
Select the sound files you wish to use, click on **Analysis Parameters** to modify the analysis parameter values, as before, then begin the processing by clicking on **Process and Save**.

Synthèse croisée sur Audiosculpt exemple1 suite

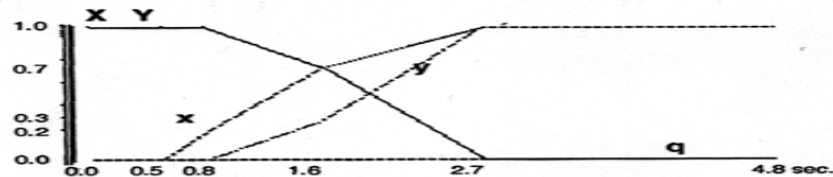
Example 5 index 17, 18 and 19

This is an example of spectral interpolation from one sound to another, a typical application of the generalized cross-synthesis mode. To begin with we will choose two sounds that resemble each other — an English horn and a cello — and proceed by constructing a transition from one to the other using a dynamic parameter file. The text file used (*crossfile-1*) indicates the temporal changes of the crossing parameters **X**, **x**, **Y**, **y**, and **q**. Do not forget that this file must be in the currently active window when the **Generalized Cross Synthesis** command is selected, otherwise AudioSculpt will assume the use of fixed parameter values.

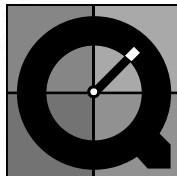
Here is the parameter file used for the crossing:



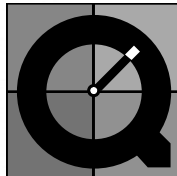
The following is a graphic representation of the parameter file *crossfile-1*:



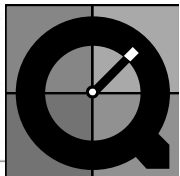
Cor anglais



violoncelle



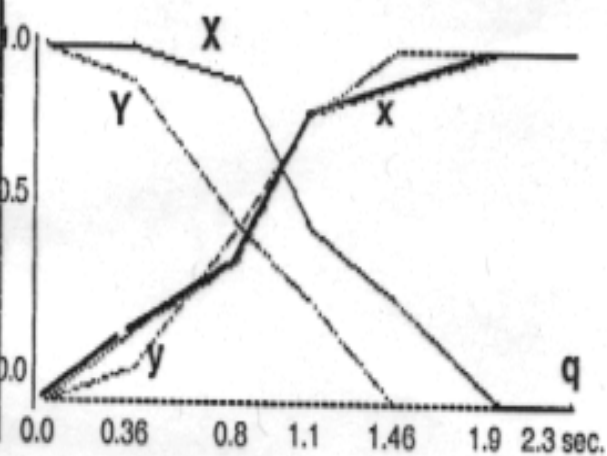
Cross cor-viol



Synthèse croisée sur Audiosculpt exemple2

teime X x Y y q

teime	X	x	Y	y	q
0.0	1.0	0.0	1.0	0.0	0.0
0.36	1.0	0.2	0.9	0.1	0.0
0.8	0.9	0.4	0.5	0.5	0.0
1.1	0.5	0.8	0.3	0.8	0.0
1.46	0.3	0.9	0.0	1.0	0.0
1.9	0.0	1.0	0.0	1.0	0.0
2.2	0.0	1.0	0.0	1.0	0.0

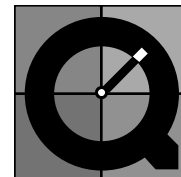


Time-varying Generalized Cross Synthesis

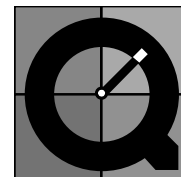
Sound 1 Cancel

Sound 2 Process in place

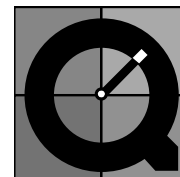
tongue



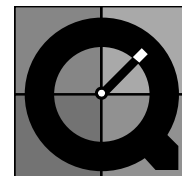
voix



Cross voix-tongue



Cross tam-voix-tongue



5

MIXAGE

5.1 Rappels

Mixage acoustique naturel et perception globale

Mixage studio/Etape d'équilibrage

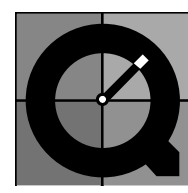
Eléments fixés et non séparables
(niveaux relatifs, affectations spatiales relatives,
filtrages relatifs)

5.2 Mixage logiciel

Protocols: 1waweform

The screenshot displays the Pro Tools software interface. At the top, the menu bar includes File, Edit, AudioSuite, Options, Setups, Display, Movie, and Help. The title bar reads "Edit: Temps/cheva/19/4/99". The main window shows a multi-track audio session with tracks for Audio 1 through Audio 8. Each track has a control panel with buttons for "rec", "read", "solo", "mute", "voice", and "waveform". The tracks are assigned to various inputs and outputs, such as "input 1", "input 2", "input 3", "input 4", "input 5", "input 6", "input 7", and "input 8". The volume and pan controls are visible for each track. The main workspace shows a waveform for "Audio 2-TCEX-05-16" and several MIDI piano rolls for tracks like "Strauss début-03", "Strauss début-01", "accord", "dil 10", and "accord dil 10-01". The right side of the interface shows a list of tracks and a MIDI keyboard. The bottom of the interface features a transport control panel with buttons for play, stop, and other functions.

Mix chevalier



Protools2 pan

The screenshot displays the Pro Tools 2 software interface. At the top, the menu bar includes File, Edit, AudioSuite, Options, Setups, Display, Movie, and Help. The title bar shows "Edit: Temps/cheva/19/4/99" and the time "13:07:20". Below the menu bar is a transport control area with buttons for Shuffle, Slip, Orid, and various playback controls. A status bar indicates the current time is 01:27:55:16, with a 1-second zoom level.

The main workspace is divided into several sections:

- Left Panel (Track List):** Lists tracks from Audio 1 to Audio 8. Each track has a "Show/Hide" button, a "Time Code" field, and a "Inserts" column. Below these are controls for "rec", "read", "solo", "mute", "voice", and "volume".
- Middle Panel (Track Parameters):** Shows detailed settings for each track, including "input", "output", "vol", and "pan". For example, Audio 1 has "input 1", "output1-tp12", "vol +6.0", and "pan >0<".
- Right Panel (Waveform):** Displays a multi-track waveform view. The top track (Audio 1) shows a complex, high-frequency signal. The lower tracks show more rhythmic, lower-frequency signals. The waveform is plotted against time, with markers at 01:26:00:00, 01:26:30:00, 01:27:00:00, 01:27:30:00, 01:28:00:00, 01:28:30:00, and 01:29:00:00.
- Bottom Panel (Edit Groups):** Shows a list of edit groups: "1 <All>", "a Group 1", "b Group 2", and "c Group 3".

At the bottom right, there is a MIDI control area with buttons for "MIDI" and various MIDI-related functions.

Protools3 vol

The screenshot displays the Pro Tools 3.0 software interface. At the top, the menu bar includes "File", "Edit", "AudioSuite", "Options", "Setups", "Display", "Movie", and "Help". The title bar reads "Edit: Temps/cheva/19/4/99" and shows the system time as "12:57:55".

The main window is divided into several sections:

- Top Control Bar:** Contains "Shuttle" and "Spot" buttons, a "Slip" button, and a "Time Code" display showing "01:27:55:16".
- Track List (Left):** Lists tracks from "Audio 1" to "Audio 8".
- Track Controls (Middle-Left):** For each track, there are buttons for "rec", "read", "solo", "mute", "voice", and "pan".
- Inserts (Middle-Left):** Shows the insert type for each track, such as "input 1", "input 2", "input 3", "input 4", "input 5", "input 6", and "input 7".
- Parameters (Middle-Left):** Displays parameters like "output1=tp12", "vol +6.0", and "pan >Dc".
- Waveform (Center):** Shows the audio waveforms for each track, with a vertical cursor at 01:27:55:16.
- Right Panel:** Contains a list of tracks and a "MIDI" section at the bottom.

Protools 4 mix

The screenshot displays the Pro Tools 4 software interface during a session titled "Edit: Temps/cheva/19/4/99". The top menu bar includes "File", "Edit", "AudioSuite", "Options", "Setups", "Display", "Movie", and "Help". The system clock shows "13:07:02".

The main window is divided into several sections:

- Transport and Time Code:** Located at the top, it includes buttons for "Shuffle", "Spot", "Slp", "Grid", and "Nudge/Grid". It also displays "Start" (01:27:55:16), "End" (01:27:55:16), "Length" (00:00:00:00), and a "1 second" marker.
- Track List (Left):** Lists tracks from "Audio 1" to "Audio 8".
- Track Controls (Middle-Left):** For each track, it shows "Gate", "input", "output", "vol", and "pan" settings. For example, Audio 1 has "input 1", "output1-tpt2", "vol +6.0", and "pan >0<".
- Waveform (Center):** Displays the audio waveforms for the selected tracks, showing amplitude over time.
- Mixer (Bottom):** A detailed view of the mixer for "Temps/cheva/19/4/99". It shows controls for "input 1" through "input 6" and "imp". Each input has "vol", "pan", "auto read", "rec", "solo", and "mute" controls. The mixer is currently set to "Audio 1" through "Audio 6".
- Track List (Right):** Lists tracks from "accord" to "Audio 4-PIS", including "accord 2", "accord 2 d", "accord dil", "accord dil 10", and "Audio 2-TCE" through "Audio 4-PIS".
- Transport (Bottom-Right):** A control panel with buttons for "stop", "rewind", "play", "fast forward", and "record".
- MIDI (Bottom-Right):** A section for MIDI editing, currently showing "MIDI".